

# WHO benchmarks for strengthening health emergency capacities



World Health  
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# Acronyms

<b>AAR</b>	After action review
<b>AEFI</b>	Adverse event following immunization
<b>AMC</b>	Antimicrobial consumption
<b>AMR</b>	Antimicrobial resistance
<b>AMS</b>	Antimicrobial stewardship
<b>AMU</b>	Antimicrobial use
<b>AST</b>	Antibiotic susceptibility testing
<b>BTWC</b>	Biological and Toxin Weapons Convention
<b>CBO</b>	Community based organization
<b>CHV</b>	Community health volunteer
<b>CHW</b>	Community health worker
<b>CPE</b>	Continuing professional education
<b>CSO</b>	Civil society organization
<b>DRR</b>	Disaster risk reduction
<b>EBS</b>	Event-based surveillance
<b>EDRM</b>	Emergency and disaster risk management
<b>EHS</b>	Essential health services
<b>EMT</b>	Emergency medical team
<b>EOC</b>	Emergency operations centre
<b>EPHF</b>	Essential public health functions
<b>EWAR</b>	Early warning alert and response
<b>FAO</b>	Food and Agriculture Organization of the United Nations
<b>FETP</b>	Field epidemiological training program
<b>FETPV</b>	Field epidemiological training program for veterinarians
<b>GLASS</b>	Global Antimicrobial Resistance Surveillance System
<b>GOARN</b>	Global Outbreak Alert and Response Network
<b>HCAI</b>	Health care acquired infection
<b>HEPR</b>	Health emergency prevention, preparedness, response and resilience
<b>HSP</b>	Hospital Safety Programme

<b>IAEA</b>	International Atomic Energy Agency
<b>IAR</b>	Intra-action review
<b>IBS</b>	Indicator-based surveillance
<b>IHR</b>	International Health Regulations
<b>IHR MEF</b>	International Health Regulations Monitoring & Evaluation Framework
<b>IM</b>	Incident management
<b>IMS</b>	Incident management system
<b>InFARM</b>	FAO Antimicrobial resistance monitoring
<b>INFOSAN</b>	International Food Safety Authorities Network
<b>INTERPOL</b>	International Criminal Police Organization
<b>IPC</b>	Infection prevention and control
<b>IPCAF</b>	Infection prevention and control assessment framework
<b>IPCAT</b>	Infection prevention and control assessment tool
<b>ISO</b>	International Organization for Standardization
<b>IT</b>	Information technology
<b>JEE</b>	Joint external evaluation
<b>LIMS</b>	Laboratory information management system
<b>M&amp;E</b>	Monitoring and evaluation
<b>MCV1</b>	Measles-containing-vaccine first-dose
<b>MDRO</b>	Multidrug resistant organism
<b>MEF</b>	Monitoring and evaluation framework
<b>MHPSS</b>	Mental health and psychosocial support
<b>MoU</b>	Memorandum of understanding
<b>NAP</b>	National action plan
<b>NAPHS</b>	National action plan for health security
<b>NCC</b>	National coordinating centre
<b>NFP</b>	National focal point
<b>NGO</b>	Nongovernmental organization
<b>OPCW</b>	Organisation for the Prohibition of Chemical Weapons
<b>PFM</b>	Public financing mechanism
<b>PHC</b>	Primary health care
<b>PHEIC</b>	Public health emergency of international concern
<b>PHEOC</b>	Public health emergency operations centre
<b>PHSM</b>	Public health and social measures



<b>POCT</b>	Point of care testing
<b>PoE</b>	Points of entry
<b>PPE</b>	Personal protective equipment
<b>PRET</b>	Preparedness and Resilience for Emerging Threats
<b>PVS</b>	Performance of Veterinary Services
<b>R&amp;D</b>	Research and development
<b>RCCE</b>	Risk communication and community engagement
<b>RD&amp;I</b>	Research, development and innovation
<b>RRA</b>	Rapid risk assessment
<b>RRT</b>	Rapid response team
<b>SimEx</b>	Simulation exercises
<b>SOP</b>	Standard operating procedure
<b>SPAR</b>	IHR State Party self-assessment annual reporting tool
<b>STAR</b>	Strategic tool for assessing risk
<b>ToR</b>	Terms of reference
<b>TrACSS</b>	Tripartite AMR Country Self-Assessment Survey
<b>UHC</b>	Universal health coverage
<b>VPD</b>	Vaccine-preventable disease
<b>WAHIS</b>	WOAH-World Animal Health Information System
<b>WASH</b>	Water, sanitation and hygiene
<b>WASH FIT</b>	Water and sanitation for health facility improvement tool
<b>WHA</b>	World Health Assembly
<b>WHO</b>	World Health Organization
<b>WOAH</b>	World Organisation for Animal Health (previously OIE)

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# Introduction

## What is the benchmark tool?

Benchmarking is a strategic process often used by businesses and institutes to standardize performance in relation to the best practices of their sector. The World Health Organization (WHO) and partners have developed a tool with a list of benchmarks and corresponding suggested actions that can be applied to implement the International Health Regulations 2005 (IHR) and strengthen health emergency prevention, preparedness, response and resilience capacities. The first edition of the benchmarks was published in 2019 to support countries in developing, implementing and documenting progress of national IHR or health security plans (e.g. national action plan for health security (NAPHS), national action plan for emerging infectious diseases, public health emergencies and health security<sup>1</sup> and other country-level plans for health emergencies). The tool has been updated to incorporate lessons from COVID-19 and other health emergencies, to align with the updated IHR monitoring & evaluation framework (IHR MEF) tools and the health systems for health security framework, and to support strengthening health

emergency prevention, preparedness, response and resilience<sup>2</sup> (HEPR) capacities and the Preparedness and Resilience for Emerging Threats (PRET)<sup>3</sup> initiative. The benchmarks support implementation of IHR and HEPR capacities and are broad in nature to improve health security and integrate multisectoral actions at national and subnational levels, where appropriate. The benchmark actions are designed to provide guidance for capacity development to move up capacity levels as measured by the IHR MEF, including voluntary external evaluation such as the Joint External Evaluation (JEE) tool<sup>4</sup> and the States Parties Self-assessment annual reporting tool<sup>5</sup> (SPAR). Other assessment tools including the Performance of Veterinary Services (PVS) Pathway (from the World Organisation for Animal Health (WOAH)), the Dynamic Preparedness Metric<sup>6</sup> (DPM), Universal Health and Preparedness Review (UHPR) and readiness assessments can also measure improvements in capacity, with the ultimate goal to sustain an optimal level of prevention, preparedness, response and resilience for health emergencies in the country.

<sup>1</sup> World Health Organization. 2019. Documenting progress following the Joint External Evaluation (JEE) and implementation of the national plan for emerging infectious diseases (EID), public health emergencies (PHE) and health security in Lao People's Democratic Republic Mission Report: 04-08 February 2019. [https://cdn.who.int/media/docs/default-source/health-security-preparedness/ehs/lao-pdr-mission-report.pdf?sfvrsn=4c81f642\\_5&download=true](https://cdn.who.int/media/docs/default-source/health-security-preparedness/ehs/lao-pdr-mission-report.pdf?sfvrsn=4c81f642_5&download=true)

<sup>2</sup> World Health Organization. 2023. Strengthening the global architecture for health emergency prevention, preparedness, response and resilience <https://www.who.int/publications/m/item/strengthening-the-global-architecture-for-health-emergency-prevention--preparedness--response-and-resilience>

<sup>3</sup> World Health Organization. Preparedness and resilience for emerging threats (PRET). <https://www.who.int/initiatives/preparedness-and-resilience-for-emerging-threats>

<sup>4</sup> World Health Organization. 2022. International Health Regulations (2005) Joint External Evaluation Tool third edition. <https://www.who.int/publications/i/item/9789240051980>

<sup>5</sup> World Health Organization. 2021. International Health Regulations (2005): State Party Self-assessment annual reporting tool, second edition. <https://www.who.int/publications/i/item/9789240040120>

<sup>6</sup> World Health Organization. 2023. Dynamic Preparedness Metric. <https://extranet.who.int/sph/dpm>

## Purpose of the benchmark tool

This document guides States Parties, partners, donors, international and national organizations, and other stakeholders on suggested actions to improve IHR and HEPR capacities for health emergencies. States Parties and other entities working to reduce the risk of global health threats can use the benchmarks and suggested actions in their national planning and investment processes to address gaps, including those identified by the IHR

MEF, DPM, UHPR and other assessment tools. The benchmarks can help countries delineate relevant steps to take to improve capacity in each technical area and document progress. The benchmarks are organized around five levels of capacity, from no capacity to sustainable capacity, mirroring the IHR MEF structure. The suggested actions at each level provide guidance to build the capacity needed to move up levels, starting at a country's current level and working up to reach level five.

## IHR MEF tools

The IHR MEF provides a framework and a process by which States Parties can monitor and evaluate the implementation of IHR capacities in accordance with the IHR. It consists of multiple components: mandatory annual reporting (SPAR) and voluntary external evaluations such as the JEE as well as after action reviews (AAR), intra-action reviews (IAR) and simulation exercises (SimEx).

## HEPR

The HEPR framework encompasses proposals and ongoing efforts related to governance, financing and systems based on the lessons learned from the COVID-19 pandemic and other emergencies and more than 300 recommendations from various independent reviews. HEPR explores core capacities across five interconnected health emergency subsystems referred to as the "five Cs" that sit at the intersection of health security, primary health care and health promotion: collaborative surveillance, community protection, safe and scalable care, access to medical countermeasures and emergency coordination. The five interlinked systems encompass and complement all core capacities required by the IHR (2005), and require a multi-sectoral, One Health and whole-of-government approach.



## Who is the audience?

The main audiences for this benchmark document are:

- States Parties to the IHR, to suggest activities for IHR and HEPR implementation and any other strategic plans relevant to ensure prevention, preparedness, readiness and resilience for health emergencies.
- Health agencies, civil society and specialized organizations at local, subnational, national, regional and global levels, to identify priorities for strengthening capacity and support the implementation of strategic plans.
- Researchers and academics for the development and conduction of implementation and operational studies to generate scientific evidence for innovative solutions to address health emergency capacity gaps and to promote training and education programs.
- Development partners, non-governmental organizations (NGOs) and other donors, who can use the benchmarks to guide funding and technical support for country assistance and ensure alignment with evolving needs, and to provide objective milestones to help guide and determine the effectiveness of assistance.
- All national sectors and stakeholders who are involved in activities to strengthen health emergency prevention, preparedness, response and resilience.
- WHO country and regional offices, to be able to prioritize assistance.
- Other stakeholders with interest in national and global improvements in health security.

For the propose of this document the following definitions are used:

### Benchmark

Denotes a standard or point of reference for the capacity. Setting benchmarks facilitates the development of plans to increase capacity levels (limited, developed, demonstrated and sustainable) and the adoption of best practices with **a target of reaching sustainable capacity for each benchmark.**

### Action

Denotes **a set of activities** in each capacity level of the benchmark. These actions define the steps that may be taken to progress up levels for the given benchmark.

## Structure of the tool

The tool covers all IHR capacities and all HEPR capabilities/capacities. This includes the 15 IHR capacities covered in SPAR (2021), the 19 technical areas in the JEE (2022), and the HEPR five Cs. The actions provided in the tool reflect an amalgam of attributes of both JEE, SPAR indicators and HEPR capacities, with technical areas arranged to reflect the IHR MEF. The tool contains a total of 80 benchmarks, 62 strengthening both IHR and HEPR capacities with an additional 18 focusing on HEPR capacities beyond IHR.

## When to use the benchmark tool?

The tool should be used during a country's planning process (such as national health plans, strategies and policies (NHPSP), NAPHS, hazard-focused plans, diseases specific plans, etc.) when a multisectoral and multidisciplinary planning team is identifying and prioritizing activities, when strengthening health

Using the benchmark tool for country planning processes

## NAPHS/HEPR

Benchmarks complement the NAPHS or HEPR planning process by looking at the current level of capacity (based on IHR MEF and other assessments) within the country and providing suggested actions to adapt according to capacity level and country context. These can then be used to update or develop plans.

## NHPSPs

After performing a situational/gap analysis, the benchmarks provide suggested actions which can be adapted to the country's current capacities and expected targets. These can then be used to update or develop NHPSPs.

## PRET

The PRET initiative recognizes that the same systems, capacities, knowledge and tools can be leveraged and applied for groups of pathogens based on their mode of transmission (e.g. respiratory, vectorborne, foodborne). The benchmarks online portal provides key actions for respiratory pathogens (which include influenza viruses and coronaviruses), which based on a country's hazard, vulnerability and capacity, can be used to update or develop a hazard-focused plan.

## Disease specific plans

The benchmarks online portal provides suggested actions for specific diseases (e.g. cholera, Ebola and respiratory pathogens (such as influenza, Middle East respiratory syndrome (MERS), coronavirus disease (COVID-19))), which based on a country's hazards, vulnerabilities and capacities, can be used to update or develop disease specific plans.

systems for health security capacities at local, subnational, national or global levels, and when strengthening HEPR architecture.

## How to use the benchmark tool?

The benchmarks tool can be utilized through this document and through the Benchmarks online portal<sup>7</sup>. Both versions of the tool present the same set of benchmarks and actions. The benchmarks tool facilitates State Party planning through the process of:



<sup>7</sup> World Health Organization. Strengthening health emergency capacities. <https://ihrbenchmark.who.int/>



Each benchmark presents actions across five levels, ranging from no capacity to sustainable capacity, as in line with the IHR MEF levels of evaluation. Please see the table below for an explanation of each benchmark level and example actions within each level of capacity.

CAPACITY LEVEL	<b>Suggested actions to achieve the capacity level and strengthen preparedness</b>  These suggested standardized actions define the steps which can be taken to move from one capacity level to the next, depending on country context and requirements  For example, actions listed in level 3 (developed capacity) are suggested actions to help achieve level 3 (developed capacity).
<b>01</b> <b>NO CAPACITY</b>	The country has no core capacity related to the area. Such as no risk assessment, plan, nor human or financial resources assigned to the area. Or capacities are in development with activities conducted ad hoc.
<b>02</b> <b>LIMITED CAPACITY</b>	<b>Actions to achieve this level:</b>  Core capacities at level 2 are in the development stage, with implementation started. While some elements of the capacity area may be in place, others are at the commencement stage. Example actions across technical areas at this level include: <ul style="list-style-type: none"> <li>● Conduct stakeholder mapping and form a national multisectoral committee/ working group to perform subsequent actions</li> <li>● Conduct analysis, including a review of existing plans and policies relevant to the area, to identify gaps and needs</li> <li>● Map existing resources and required needs for implementation in the area</li> </ul>
<b>03</b> <b>DEVELOPED CAPACITY</b>	<b>Actions to achieve this level:</b>  Core capacities at level 3 are in place at the national level but are not sustainable. Example actions across technical areas at this level include: <ul style="list-style-type: none"> <li>● Develop and implement procedures, processes and plans at national level to support capacity implementation for the area</li> <li>● Develop and conduct training of relevant staff at the national level</li> <li>● Establish systems relevant to the area, such as standards, data and information sharing, deployment mechanisms and networks</li> </ul>

<p><b>04</b> <b>DEMONSTRATED</b> <b>CAPACITY</b></p>	<p><b>Actions to achieve this level:</b></p> <p>Core capacities at level 4 are in place at the national and subnational level and are somewhat sustainable through being supported by funding and inclusion in national plans. Example actions across technical areas at this level include:</p> <ul style="list-style-type: none"> <li>● Conduct SimEx/AAR/IAR or other M&amp;E actions (if not already performed at earlier levels)</li> <li>● Expansion and adaptation of national-level plans, training actions and systems to the subnational level</li> <li>● Securing funding</li> </ul>
<p><b>05</b> <b>SUSTAINABLE</b> <b>CAPACITY</b></p>	<p><b>Actions to achieve this level:</b></p> <p>Core capacities at level 5 are fully functional and sustainable, reaching the highest level of achievement of core capacity implementation. Example actions across technical areas at this level include:</p> <ul style="list-style-type: none"> <li>● Regular, ongoing improvement of systems and functions based on updates and integration of results from SimEx/AAR/IAR and other M&amp;E actions</li> <li>● Achieve long-term sustainability of systems and capacities, including full funding</li> <li>● Contributions to capacity development through peer-to-peer learning and sharing of best practices at subnational, national and international levels</li> </ul>

In this tool, actions are presented within each level with a multisectoral approach. Each level contains actions for IHR implementation and health sector as well as actions which require engagement from other sectors. This is visually represented in the example table below. The second row in each level lists actions that require engagement from other sectors alongside additional actions. This listing does not prioritize actions, it serves as a reference list to support a multisectoral approach.

Capacity level	Benchmark actions
<p><b>01</b> <b>NO CAPACITY</b></p>	<p>The country has no core capacity related to the area. Such as no risk assessment, plan, nor human or financial resources assigned to the area. Or capacities are in development with activities conducted ad hoc.</p>
<p><b>02</b> <b>LIMITED</b> <b>CAPACITY</b></p>	<p><b>IHR Implementation and Health Sector</b></p> <ul style="list-style-type: none"> <li>● Action 1</li> <li>● Action 2</li> <li>● Action 3</li> </ul> <p><b>Other Sector Engagement</b></p> <p>Participation and contribution of other sectors to actions: 1, 2</p> <ul style="list-style-type: none"> <li>● Action 4</li> </ul>

However, for two benchmarks<sup>8</sup> the two rows are reversed with the top row of each level containing actions for IHR implementation, animal health and agricultural sectors while the lower row contains actions which require engagement from human health and other sectors.

## How to apply the benchmarks

The benchmarks tool provides a list of suggested actions which can then be used at the country-level to inform the health emergency planning process. This includes determining the activities required to achieve each suggested action based on country context. All actions and activities are aimed at meeting a priority recommendation from previous assessments or to advance to a higher level in capacity implementation, focusing on progressing to sustainable capacity (level 5) in the future. For example, an action may be to develop guidelines and standard operating procedures (SOPs) relevant to the technical area; activities which contribute to this may include forming a working group to develop such guidelines and SOPs, identifying a focal point for drafting documents, finalizing the guidelines and SOPs, developing and implementing training packages to increase awareness and facilitate roll out.

While benchmark actions are primarily used to support the planning process for IHR and HEPR implementation, they may additionally be used to help develop priority recommendations during evaluations and reviews (such as a JEE) or to help track incremental progress made from one capacity level to the next.

## Benchmarks online portal

Countries are able to quickly develop draft national plans through the Benchmarks online portal<sup>9</sup>. These plans are based on the automated input of benchmark actions according to available current JEE scores/ SPAR scores and the score in which the country would like to aim to progress towards. The online tool takes users through a step-by-step process, is fully interactive, and countries can manually adapt the target levels and actions as needed for the country context.

The Benchmarks online portal contains a reference library to support application of the benchmarks. The library contains downloadable documents (best practices, guidelines, tools, training packages) which provide guidance for implementing benchmark actions by technical area. The library is a living portal that is continually being updated and which users can contact through the webpage directly to request certain guidance or to share additional references to be included.

## Building systems using the benchmarks

The collective and coordinated actions described in the benchmarks contribute to the country's health systems for health security. These benchmark actions support the strengthening of health system capacity for health emergency prevention, preparedness, response and resilience. These benchmark actions serve five purposes in strengthening the system:

- Allow for a definition of desirable attributes – what actions are required for prevention,

<sup>8</sup> Benchmark 4.5 in AMR (Optimize use of antimicrobial medicines in animal health and agriculture) and benchmark 5.3 in Zoonotic diseases (Safe practices in animal breeding and animal product systems limit the risk of zoonotic diseases).

<sup>9</sup> World Health Organization. Strengthening health emergency capacities. <https://ihrbenchmark.who.int/>

preparedness, response and resilience at each level of the benchmark.

- Provide a way of defining health emergency priorities for countries, development partners and WHO.
- Provide a useful way of clarifying essential actions that require a more integrated response and recognize the interdependence of each action of the benchmarks.
- Suggest actions that require the support of multiple sectors.
- Support the optimal implementation of activities based on whole-of-society, whole-of-government and multilevel approaches to strengthen overall IHR and HEPR capacities at national and subnational levels.

### What is the tool about?

- A list of benchmarks that are required to sustain capacities to support IHR implementation, effective prevention, preparedness, response and resilience, and overall management of health emergencies.
- A list of suggested actions that can increase capacities for IHR implementation and

prevention, preparedness, response and resilience at local, subnational, national and global levels.

- Offering recommendations informed by technical experts.
- A starting point for development of evidence-based strategic plans/programs for health emergency prevention, preparedness, response and resilience.

### What is the tool not about?

- A list of mandatory activities.
- Completely applicable to every context.
- An exhaustive list of actions/recommendations.
- Comparing country capacity levels.

### Updating process of the benchmark tool

Updating the benchmarks tool took place between August 2020 and September 2023, through multiple rounds of expert consultation from States Parties, WHO regional and country offices, WHO headquarters, partner agencies and technical experts with experience using the first edition of the benchmarks. The process followed four phases:

PHASE 01	PHASE 02	PHASE 03	PHASE 04
<ul style="list-style-type: none"> <li>● August 2020 to February 2022</li> <li>● Wide online consultation across all levels of WHO and partners</li> <li>● Map and incorporate lessons learned from COVID-19</li> </ul>	<ul style="list-style-type: none"> <li>● March 2022 to March 2023</li> <li>● Ongoing extensive consultation across WHO and partners</li> <li>● Update draft to align with updated IHR MEF, HSforHS, HEPR</li> <li>● Further Incorporate recommendations from COVID19 and other recent health emergencies, novel initiatives and new health security frameworks</li> <li>● Added new benchmarks and updated all actions</li> </ul>	<ul style="list-style-type: none"> <li>● March 2023 to May 2023</li> <li>● In person global consultation meeting to finalize draft.</li> <li>● Incorporate suggestions from the global meeting</li> <li>● Finalization of document with all relevant technical focal points</li> </ul>	<ul style="list-style-type: none"> <li>● May 2023 to September 2023</li> <li>● Development of additional benchmarks for HEPR technical areas</li> </ul>

## Content updates

- All benchmarks and all actions were updated to incorporate lessons learned from recent health emergencies.
- New benchmarks were added to this edition, based upon alignment with current

health security frameworks, IHR capacities as per the third edition of the JEE (2022) and the second edition of the SPAR (2021), and HEPR. While the majority of benchmarks strengthen both IHR and HEPR capacities, additional benchmarks that focus on HEPR capacities beyond IHR were added.

Technical area	New benchmark
<b>Alignment with JEE/SPAR</b>	
<b>Legal instruments</b>	1.2 Gender equity and equality principles are applied throughout IHR capacities
<b>IHR coordination, national IHR focal point functions and advocacy</b>	3.3 Strategic planning for IHR, preparedness or health security are in place and supported by functional advocacy mechanisms for IHR implementation
<b>Antimicrobial resistance</b>	4.3 Effective mechanisms are in place to prevent multidrug resistant organisms (MDRO) 4.5 Optimize use of antimicrobial medicines in animal health and agriculture
<b>Zoonotic diseases</b>	5.3 Safe practices in animal breeding and animal product systems limit the risk of zoonotic diseases
<b>Immunization</b>	7.3 An effective mechanism for mass vaccination for epidemics of vaccine preventable disease (VPD) is in place
<b>Surveillance</b>	10.2 Well functioning event verification and investigation systems are in place
<b>Human resources</b>	11.4 Multisectoral workforce surge strategy for health emergencies is well established and functional
<b>Health emergency management</b>	12A.1 Effective risk profiling, readiness assessment and rapid risk assessment (RRA) processes are in place and strongly linked to health emergency and disaster management plans and structures 12A.6 Research, development and innovation (RD&I) capacity for emergency management is in place
<b>Health services provision</b>	14.2 Mechanism for continuity of essential health services (EHS) during a health emergency is well established 14.3 Mechanism is in place to ensure effective utilization of health services before, during and after health emergencies at all levels of health service delivery
<b>Infection prevention and control</b>	15.1 National and health facility level infection prevention and control (IPC) programmes are in place 15.2 A functional healthcare acquired infection (HCAI) surveillance system is in place for public health decision-making 15.3 Provide a safe environment in all healthcare facilities

<b>Risk communication, community engagement and infodemic management</b>	16B.1 Community engagement is integrated and prioritized within the management of health emergencies and unusual events
<b>Points of entry and border health</b>	17.3 An effective multisectoral mechanism for risk-based approach to international travel related measures is in place
<b>New technical areas</b>	
<b>Public health and social measures</b>	20.1 Leadership and governance dedicated to public health and social measures (PHSM) is in place in relevant sectors, at all levels and between levels
<b>Additional benchmarks</b>	
<b>Health emergency management</b>	12B.1 All hazard health emergency and disaster risk management (EDRM) are mainstreamed across IHR capacities 12B.2 Safe and resilient hospitals and health facilities are in place to rapidly respond to emergencies
<b>Risk communication, community engagement and infodemic management</b>	16B.2 Inclusive community centred governance and management of health emergencies is in place 16B.3 Capacity-building mechanisms for multisectoral community health workforce and community engagement in the management of health emergencies and resilience building are well established 16C.1 An infodemic management system for health emergencies and unusual events is in place
<b>Alignment with HEPR (additional benchmarks for health emergency capacities beyond IHR)</b>	
<b>Collaborative surveillance</b>	H1.1 A resilient monitoring system is established and fully functional to routinely monitor the key metrics of health service availability, capacity, access and usage H1.2 Genomic surveillance systems are in place and functional H1.3 Integrated, interoperable and standardized data systems and data sharing platforms are established and functional H1.4 Integrated networks are created and functional to support surveillance information sharing and collaboration

<b>Community protection</b>	H2.1	Integrated vector control management systems are in place
	H2.2	Community-driven water, sanitation and hygiene (WASH) interventions are in place and effective
	H2.3	Social welfare and protection systems are expanded and health emergency specific mechanisms are implemented
	H2.4	Resilient food production and distribution systems are functional to ensure food security during health emergencies
	H2.5	The protection of livelihoods, business continuity and continuity of education and learning systems is in place and functional during health emergencies
	H2.6	Strategic scaling of community health services and mental health and psychosocial support (MHPSS) are in place for health emergencies
<b>Access to countermeasures</b>	H4.1	Standardized platforms for conducting equitable and scalable clinical trials are created and functional
	H4.2	Regulatory and legal frameworks are developed and functional for timely trials, product review and approval
	H4.3	Adaptable manufacturing platforms are established and functional, and supported by prenegotiated agreements
	H4.4	Manufacturing capabilities are enhanced through ever-ready capabilities for rapid mobilization of medical countermeasure production during health emergencies
	H4.5	National regulatory frameworks for manufacturing platforms are developed and implemented for health emergencies
	H4.6	Coordinated demand aggregation systems are established and operational
	H4.7	Equitable and transparent needs-based allocation frameworks are in place for medical countermeasures during health emergencies
<b>Emergency coordination</b>	H5.1	Operational support and logistics platforms are established and functional for health emergencies

- Actions for foundational health system elements and other sector contributions were added for each benchmark.



## Continuous updating and improvement of the tool

The development of the benchmarks tool follows a process of continuous improvement. We will continue to receive comments and suggestions on the tool

from users around the world who want to share their implementation experience. Following versions of the benchmarks tool will be updated based on these contributions, keeping up to date with the IHR MEF framework, ongoing lessons learned from health emergencies, IHR and HEPR implementation.

# Benchmarks: technical areas



# 01

## Legal instruments

### Legal instruments:

Adequate legal instruments for States Parties to support and enable the implementation of all their obligations and rights created by the International Health Regulations (2005) (IHR). The development of new or modified legal instruments in some States Parties for the implementation of the Regulations. Where new or revised legal instruments may not be specifically required under a State Party's legal system, the State may revise some laws, regulations or other legal instruments in order to facilitate their implementation in a more efficient, effective or beneficial manner.



### IMPACT:

Legal instruments are in place in all relevant sectors to support IHR implementation including core capacity development and maintenance.



### MONITORING AND EVALUATION:

Current legal instruments including constitutions, laws, arrêtés, decrees, regulations, administrative requirements or other government instruments are proven to adequately support IHR implementation across relevant sectors.

### GENDER:

All persons irrespective of their gender identity (men, women and gender diverse people), should have equal and equitable access to service delivery during health emergencies, support and protection to effectively conduct their work as part of the workforce responding to health emergencies, and protection from marginalization and stigmatization during health emergencies, among others. This needs to be supported by adequate systems that incorporate a gender-responsive approach, including through the identification of relevant data that can inform gender-specific vulnerabilities, risks and coping capacities. This data can in turn inform the design of appropriate strategies to increase resilience throughout health emergency preparedness, response and recovery cycles. The integration of gender analysis within systematic assessments conducted across relevant sectors can help identify key opportunities and challenges that strengthen health emergency preparedness, response, recovery and IHR implementation<sup>10</sup>. The identified priority gender gaps<sup>11</sup> should be addressed with sustainable strategies and integrated through multisectoral action across all IHR capacities.



### IMPACT:

Gender informs the design of health emergency preparedness, response and recovery legal instruments, frameworks and strategies, resulting in equal and equitable access to health services, information and protection mechanisms for health security. Moreover, the integration of gender-responsive approaches into health emergency preparedness, response and recovery will help achieve gender parity and gender equality in the workplace, balance representation in leadership and decision-making roles (particularly increasing representation of women), and help ensure decent working conditions for all.



### MONITORING AND EVALUATION:

Gender equity and equality is integrated in relevant sectors involved in IHR implementation and in response to all health threats and emergencies.

<sup>10</sup> Gender mainstreaming for health managers: a practical approach provides a number of tools that can be used to conduct gender assessments across sectors. These assessments provide valuable information about the variations in risk, exposure and vulnerability of population groups based on their access to and control of resources, such as information, health services and other areas relevant to health security. This information, in turn, should inform the design and implementation of IHR capacity strengthening strategies, to ensure they are adequately tailored to reduce risks, vulnerability and exposure across population groups. Note: An updated version of the manual will become available in 2023.

<sup>11</sup> High priority gender gaps refer to sex and gender gaps that are assessed to (i) inhibit implementation effectiveness, (ii) potentially affect a large proportion of the population of the disadvantaged sex and (iii) act as a constraint to effective and full preparedness and response that the entire population can access. Based on the gender analysis conducted, each country will determine which elements of gender inequalities are high priority, with consideration given to the differences in sociocultural contexts and gender norms between countries.

<b>BENCHMARK 1.1: Legal instruments are in place across relevant sectors to support and enable International Health Regulations (2005) (IHR) implementation and compliance</b> <b>OBJECTIVE: To document and review legal instruments to identify gaps across relevant sectors and develop new or revise legal instruments as necessary to support and facilitate IHR implementation and compliance in a more efficient, effective or beneficial manner</b>	
CAPACITY LEVEL	BENCHMARK ACTIONS
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● The country has not conducted legal mapping<sup>12</sup> (identification, review, collection and documentation of relevant legal instruments<sup>13</sup>) for IHR implementation.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<p><b>Mechanism for legal mapping</b></p> <ul style="list-style-type: none"> <li>● Establish a national multisectoral coordination working group (with drafted terms of reference (ToRs)) for legal preparedness to convene key stakeholders to coordinate the identification, review, collection and documentation of legal instruments for IHR implementation across relevant sectors.</li> <li>● Identify experts from relevant sectors (outside of public health) who should be part of the national multisectoral coordination working group for aligning efforts to review identified gaps for IHR implementation in the health sector.</li> <li>● Identify human resource capacity to complete the legal mapping process, including development of mechanisms to enhance legal literacy across relevant sectors on strengthening legal preparedness.</li> <li>● Identify, review and collect available legal instruments across sectors relevant to health emergency prevention, preparedness and response that enable effective implementation and compliance with IHR requirements.</li> <li>● Develop an implementation plan and timeline for conducting legal mapping and legal analysis at the national and subnational levels, where applicable.</li> <li>● Conduct legal mapping of identified legal instruments for IHR implementation at national and subnational levels.</li> </ul>

<sup>12</sup> Legal mapping helps to survey (and compare) the relevant legal instruments existing within a larger context in order to understand the country's legal frameworks for the prevention, preparedness, and response of public health emergencies. Such mapping provides a look at legal instruments across jurisdictions and/or review of legal instruments within a jurisdiction to understand how public health risks are addressed. Legal mapping involves the review and documentation of the existence of legal authorities, what those authorities do or provide, and what they do not provide. Legal mapping is an objective activity. The process does not intend to evaluate the effectiveness of legal instruments, nor analyze its gaps.

<sup>13</sup> Legal instruments are measures enacted and implemented by national or subnational levels of government that are legally binding and enforceable. The types of legal instruments vary depending on the country's legal system (e.g. constitutions, laws, arrêtés, decrees, regulations, administrative requirements and applicable international agreements).

### Advocacy

- Develop advocacy materials and packages to raise awareness on the process and resources needed to conduct a legal mapping and legal analysis at the national and subnational levels, where applicable.
- Identify legislative/policy champion(s) who can advocate for the role and necessity of conducting legal mapping and legal analysis at the national and subnational levels.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8

## 03 DEVELOPED CAPACITY

### Mechanism for conducting and completing a legal analysis and developing and/or revising necessary legal instruments in the health sector

- Establish a unit or function within the health sector to serve as a liaison across relevant sectors, ensure legal mapping documentation is kept up to date and to align activities across relevant sectors.
- Conduct legal analysis<sup>14</sup> (legal mapping and legal assessment) and develop or revise the necessary legal instruments for IHR implementation at the national and subnational levels.
- Complete a functional review using legal mapping results to identify, understand, assess and analyse gaps within the country's legal instruments for IHR implementation across the health sector at the national and subnational levels, where applicable.
- Complete a multisectoral review of identified gaps for IHR implementation across the health sector and develop or revise legal instruments in the health sector at the national and subnational levels, where applicable.

### Advocacy

- Use and update strategies and materials (e.g. communication strategies with targeted messaging based on stakeholder) to advocate for needed changes to legal instruments to support enhanced IHR compliance in the health sector at the national and intermediate levels, where applicable.
- Increase awareness of changes required to ensure that legal instruments support enhanced IHR compliance through legislative/policy champions.
- Develop training curricula for health and relevant sector experts about legal instruments for health emergency prevention, preparedness and response.

<sup>14</sup> Legal analysis is a process consisting of legal mapping, legal assessment and legal surveillance.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7

- Involve all national legislative and regulatory bodies, as well as law enforcement bodies (e.g. parliament, senate, interministerial committees, police, national security agencies, etc.) in regular preparatory meetings about proposals for revision of IHR related legal instruments.
- Involve relevant professional organizations (e.g. medical associations, law associations) and civil society organizations (CSOs) in discussions around revising legal instruments.

## 04 DEMONSTRATED CAPACITY

### **Mechanisms for conducting and completing a legal analysis and developing and/or revising necessary legal instruments in all sectors**

- Conduct a legal analysis across relevant sectors and government levels (to complement the health sector's legal analysis) to identify, understand, assess and analyse gaps within the country's legal instruments for IHR implementation.
- Analyse any conflict of law in legal instruments for IHR implementation across relevant sectors.
- Convene a national multisectoral coordination working group for legal preparedness to align efforts to review identified gaps in legal instruments for IHR implementation across sectors and develop or revise legal instruments at the national and subnational levels, where applicable.
- Routinely organize and conduct simulation exercises, after action reviews, intra-action reviews (SimEx/AAR/IAR) (as relevant) to monitor and evaluate the implementation and effectiveness of legal instruments relating to IHR implementation.
- Develop or revise legal instruments as necessary based on identified gaps for IHR implementation across all sectors and all levels of governance.

### **Advocacy**

- Develop and adjust advocacy strategies and materials to support development and revisions of necessary legal instruments across all sectors and all levels of governance.
- Maintain a routine training curricula for health and relevant sector experts about legal instruments for health emergency prevention, preparedness and response at national and subnational levels.

## 05 SUSTAINABLE CAPACITY

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7

- Monitor and control compliance with relevant legal instruments in relevant sectors and adjust when required.
- Identify clear roles and legal responsibilities for IHR implementation across relevant sectors (i.e. human health, animal health, environment, military, education, social protection, etc.).

### **Mechanisms for conducting and completing legal surveillance**

- Provide mechanisms for continuous monitoring and evaluation (M&E) of current legal instruments and tracking changes over time (legal surveillance<sup>15</sup>) for implementation of IHR.
- Amend or revise relevant legal instruments, based on lessons learned from M&E, continuous data collection and SimEx/AAR/IAR.

### **Advocacy**

- Participate in international initiatives to support country and organization effort to build capacity in legal preparedness<sup>16</sup> in line with the IHR.
- Engage the country in peer-to-peer learning programmes at the subnational, national and international levels.
- Maintain and improve the availability and accessibility of the country's legal instruments (through a publicly available database) in order to promote global information sharing to achieve a common and collective understanding of legal preparedness.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5

- Assess country governance structure and context to ensure that the country has a governance environment that enables effective IHR implementation with solid and reliable institutions and sound domestic policies that fully respect the dignity, human rights and fundamental freedoms of persons.
- Document, widely disseminate and apply relevant existing and updated legal instruments and administrative requirements appropriately by relevant sectors.

<sup>15</sup> Legal surveillance refers to the process of tracking changes to legal instruments over time.

<sup>16</sup> Legal preparedness can be defined as the capacity to understand, map, develop, refine and utilize legal instruments and related authorities that enable implementation of public health activities.



BENCHMARK 1.2: Gender equity and equality principles are applied throughout IHR capacities	
OBJECTIVE: To integrate gender equity and equality within all IHR capacity areas to ensure gender-based health inequities and inequalities are not exacerbated by health emergency prevention, preparedness, response or recovery interventions	
CAPACITY LEVEL	BENCHMARK ACTIONS
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● No analysis available on health-related gender inequities and inequalities in the context of health emergencies, to inform health emergency prevention and preparedness strategies.</li> <li>● No efforts made to specifically promote gender equity and equality and respect for human rights commitments advance health equity within any IHR capacities.</li> <li>● No coordination mechanisms exist to oversee the gender responsiveness of health emergency preparedness and response interventions.</li> <li>● There is a dearth of gender-responsive interventions within operational plans for the strengthening of IHR core capacities or the operationalization of health emergency preparedness and response plans.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Integrate gender analysis into specific IHR capacity assessments in relevant sectors to identify and prioritize gender gaps, and integrate indicators to measure effects of gender norms, roles and relations on an individual's differential vulnerability to health emergencies, including treatment received, immediate and long-term effects, and differences between persons with different gender identities.</li> <li>● Compile key sources of information (e.g. academic-, scientific-, government-led or other) to identify key sociocultural, economic and other factors influencing gender gaps in access to and use of health information, services, care and treatment for essential health services in the country<sup>17</sup>.</li> <li>● Promote collection, analysis, dissemination and use of data disaggregated by sex and age at minimum, and by pregnancy status, across all IHR capacities.</li> <li>● Identify government entities tasked with overseeing, developing and implementing gender equity and equality policies, and engage to establish formal or informal coordination mechanisms for application of these policies within the health sector, with special reference in health emergencies (e.g. the ministry/secretary of women's affairs, child protection authorities, social welfare and sociology departments, or others).</li> <li>● Appoint an official focal point responsible for cross-sectoral engagement for gender equity and equality and health emergencies and identify gender focal points in relevant sectors such as education, social welfare and employment.</li> </ul>

<sup>17</sup> Resource: *Out-of-Pocket Expenditure: The Need for a Gender Analysis*

- Conduct a stakeholder analysis to identify relevant actors that could support integration of gender-responsive actions across IHR capacity areas, and identify linkages between programmes dedicated to the advancement of gender equity and equality (including education, social and economic sectors) and the development of IHR core capacities.
- Develop training curricula to raise awareness and understanding of gender and human rights issues within health security.
- Assess whether decision making mechanisms for IHR core capacities incorporate equitable representation of diverse stakeholders, including balanced gender representation.
- Establish a robust national communications strategy to promote gender-specific needs and considerations during health emergencies.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8, 9

- Institutionalize national policy frameworks promoting the advancement of non-discrimination and gender equity and equality.

## 03 DEVELOPED CAPACITY

- Conduct novel research jointly with relevant stakeholders (including government and nongovernment actors) to assess gender-based health inequities and inequalities; how these may be exacerbated by potential health emergencies and how they negatively affect the country's (and individuals') capacity to prepare, respond and recover from health emergencies. This could also include holding consultations with communities living in vulnerable situations to identify priority gender needs and potential implementation mechanisms, to inform development of IHR sector-specific action plans<sup>18</sup>.
- Identify and prioritize gender gaps in both service delivery and service access based on gender analysis data collected through IHR capacity assessments, compilation of key sources of information and novel research, to be addressed with short-, medium- and long-term interventions.
- Develop and implement an advocacy package based on gender gap analysis to support integration of gender-responsive actions into relevant IHR legislation and sector-specific action plans, with dissemination to relevant decision-makers and policy-makers<sup>19</sup>.
- Promote intersectional analysis of sex and age disaggregated data, including income, place of living, language, ethnicity, gender diverse people and other variables to identify most vulnerable communities.

<sup>18</sup> Resource: Gendered Health Analysis: COVID-19 in the Americas

<sup>19</sup> Resource: Advancing health through attention to gender, equity and human rights: stories from the Western Pacific Region

- Coordinate with relevant government sectors working on human rights-based approaches and gender equality skills to conduct trainings and seminars to raise awareness and build an intersectoral team of experts with skills to integrate gender within IHR core capacity development<sup>20</sup>.
- Identify a unit or team with established ToRs to be the focal point from the health ministry to oversee progress towards integration of gender-responsive approaches into health service access and delivery.
- Jointly work with relevant sectors to integrate gender analysis findings into planning and development of IHR capacities and corresponding action plans<sup>21,22</sup>.
- Develop a standalone, multisectoral gender equality strategy for health emergency preparedness, response and recovery, linked to IHR capacities and to broader national gender policies and frameworks.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 7, 8

- Integrate gender-responsive approaches, informed by a gender analysis, into national policies to ensure equal and equitable access to services, including for all genders, in education, health, employment and living conditions<sup>23</sup>.
- Integrate health security into the national gender policy objectives to ensure gender dimensions of health emergency preparedness, response and recovery are addressed.
- Integrate health emergency scenarios into capacity-building efforts led by relevant sectors such as the ministry of social/family/women's affairs, to raise awareness of the continued relevance of gender in the context of health emergencies.
- Systematically conduct gender analysis of health information systems data, on health seeking behaviour, service access, service provision and other data related to health emergency response and recovery in relevant surveillance systems<sup>24</sup>.

## 04 DEMONSTRATED CAPACITY

<sup>21</sup> This could include, but not be limited to, the design and implementation of systems to advance equal access to employment opportunities and decision making for all individuals including all genders; the establishment of policies to formalize and improve conditions of care workers that address the needs and opportunities of all genders; the review of surveillance data systems to ensure data collection, analysis and reporting integrates a gender-lens; and the integration of human rights-based approaches, inclusive of gender responsive interventions, across health sector strategies.

<sup>22</sup> Resources: Taking sex and gender into account in emerging infectious diseases programme: an analytical framework; Gender mainstreaming for health managers: a practical approach, Human rights and gender equality in health sector strategies: how to assess policy coherence. A tool for strengthening gender-sensitive national HIV and Sexual and Reproductive Health (SRH) monitoring and evaluation systems. Human resources for health: a gender analysis. Delivered by women led by men: a gender and equity analysis of the global health and social workforce.

<sup>23</sup> Resource: Guide for analysis and monitoring of gender equity in health policies

<sup>24</sup> Resources: Key Considerations for Integrating Gender Equality into Health Emergency and Disaster Response: COVID-19; Health and Service Availability Monitoring System (HeRAMS). The Gender Handbook for Humanitarian Action, Guidelines for Integrating Gender-Based Violence Interventions in Humanitarian Action – Reducing risk, promoting resilience and aiding recovery, Minimum Initial Service Package (MISP) Resource.

- Promote discussions, public engagements and seminars on gender equity and equality in health emergencies as an essential thematic area and disseminate findings of systematic data collection systems to ensure continuous engagement and positioning of the relevance of gender equity and equality for IHR.
- Establish a functional multisectoral coordination mechanism of gender focal points and experts tasked with periodically reviewing progress on the integration of gender into IHR capacity development, identifying gaps and issuing recommendations to inform future planning.
- Appoint a gender advisor within health sector M&E teams responsible for monitoring data collected for gender-responsive interventions and initiatives and reporting on IHR, including integration of gender equity and equality principles in health emergencies as a pillar to assess in SimEx/AAR/IAR (as relevant).
- Identify and implement evidence-based, sector-specific interventions for the integration of gender-responsive approaches for health security<sup>25</sup>.
- Integrate specific objectives related to gender inequities and inequalities in health into national health sector policies and strategies, including in health emergency contexts, with budgeted activities and a monitoring framework that reflects gender-responsive indicators.
- Integrate training modules focused on gender analysis in health and gender-responsive programming skills into national health systems trainings.
- Include gender equity and equality with special reference to health emergency prevention, preparedness and response as a major thematic area in multisectoral research symposia, orations, conferences and other academic and/or scientific venues that focus on health systems.
- Incorporate gender analysis and interventions for gender equity and equality into curricula and research agendas for undergraduate and postgraduate research in relevant subject streams (e.g. sociology, disaster management, public health, epidemiology, etc.).

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8, 9

<sup>25</sup> This could include (but not be limited to): Updating sector-specific action plans based on monitoring feedback and analysis of gender intervention data; integration of sexual and reproductive health services, as well as prevention and response to gender-based violence, into national and local health emergency response plans; development of legal frameworks that advance gender equity in recruitment, retention and promotion of staff; to address gender imbalance in representation particularly within senior positions at local and national levels; and develop risk communication and community engagement tools that are gender responsive.

## 05 SUSTAINABLE CAPACITY

- Collect, analyse and use on a periodic basis, indicators, statistical approaches and monitoring tools (including qualitative and mixed methods approaches) to understand and address gender inequality in health emergencies, including at subnational levels<sup>26</sup>.
- Identify and integrate M&E indicators to track progress towards gender-responsive health security within relevant strategies, including through the establishment and maintenance of data platforms to identify gender gaps in health service access and delivery during health emergencies.
- Document best practices and lessons learned related to addressing gender inequalities in health emergencies and disseminate widely across IHR capacities, relevant sectors and external partners to encourage peer-to-peer learning and knowledge-sharing across countries.
- Develop and sustain mechanisms to monitor, detect and address unequal gender distribution in key decision-making roles across the health system.
- Outline specific objectives within the national IHR capacity development strategies that seek to increase the ratio of reached populations in vulnerable situations – disaggregated by sex and age – during preparedness, response and recovery interventions.
- Establish clear funding streams to support gender integration across IHR capacity areas and ensure that specialized gender functions and specialists are in place and adequately resourced.
- Establish an accountability framework that is aligned with the national gender policy, against which staff, systems, structures and activities are audited.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7

- Focus all relevant national policies on addressing gender inequity and inequality, and make reference to interlinkages with health emergencies and the implementation of IHR capacities.
- Develop mechanisms to monitor, evaluate and report gender inequities and inequalities across relevant sectors.
- Develop an action plan to operationalize the national gender policy, including health security objectives.

<sup>26</sup> Resource: Pan American Health Organization. 2019. *A framework for indicators for monitoring gender equality and health in the Americas*.



## Tools:

- International Health Regulations (2005). Third edition. Geneva: World Health Organization; 2016 (<https://www.who.int/publications/i/item/9789241580496>).
- Supporting national implementation of International Health Regulations [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/activities/supporting-national-implementation-of-international-health-regulations>).
- World Health Organization Strategy (2022–2026) for the National Action Plan for Health Security. Geneva: World Health Organization; 2022 (<https://www.who.int/publications/i/item/9789240061545>).
- Health systems strengthening glossary. Geneva: World Health Organization (<https://cdn.who.int/media/docs/default-source/health-systems-strengthening-glossary.pdf>).
- Terrestrial Animal Health Code. Paris: World Organisation for Animal Health; 2022 ([https://www.woah.org/en/what-we-do/standards/codes-and-manuals/terrestrial-code-online-access/?id=169&L=1&htmlfile=chapitre\\_vet\\_legislation.htm](https://www.woah.org/en/what-we-do/standards/codes-and-manuals/terrestrial-code-online-access/?id=169&L=1&htmlfile=chapitre_vet_legislation.htm)).
- PVS Pathway [website]. Paris: World Organisation for Animal Health; 2023 (<https://www.woah.org/en/what-we-offer/improving-veterinary-services/pvs-pathway/#ui-id-2>).
- International health regulations (2005): state party self-assessment annual reporting tool, 2nd ed. Geneva: World Health Organization; 2021 (<https://www.who.int/publications/i/item/9789240040120>).
- Addressing sex and gender in epidemic-prone infectious diseases. Geneva: World Health Organization; 2007 (<https://apps.who.int/iris/handle/10665/43644>).
- Pande RP, Mollard IMP, Lnu NKH. Gender in Preparedness and Response Toolkit (GENPAR). Washington DC: World Bank Group; 2022 (<https://www.genderandcovid-19.org/resources/gender-in-preparedness-and-response-toolkit-genpar/>).
- Gender mainstreaming for health managers: a practical approach. Facilitator's Guide. Geneva: World Health Organization; 2011 (<https://www.who.int/publications/i/item/9789241501057>).
- George A. Human resources for health: a gender analysis. India: World Health Organization; 2007 (<https://www.who.int/publications/m/item/human-resources-for-health-a-gender-analysis>).
- Delivered by women, led by men: a gender and equity analysis of the global health and social workforce. Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/311322>).
- Building healthy and equitably workplace for women and men: a resource for employers and worker representatives. Geneva: World Health Organization; 2011 (<https://apps.who.int/iris/handle/10665/77350>).

- Human rights and gender equality in health sector strategies: how to assess policy coherence. Geneva: World Health Organization, Office of the High Commissioner for Human Rights and the Swedish International Development Cooperation Agency; 2011 (<https://www.who.int/publications/item/9789241564083>).
- Incorporating intersectional gender analysis into research on infectious diseases of poverty: a toolkit for health researchers. Geneva: World Health Organization and TDR for research on diseases of poverty; 2020 (<https://www.who.int/publications/item/9789240008458>).
- Health Resources and Services Availability Monitoring System (HeRAMS) [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/initiatives/herams>).
- Taking sex and gender into account in emerging infectious disease programme: an analytical framework. Manila: WHO Regional Office for Western Pacific; 2011 (<https://www.who.int/publications/item/9789290615323>).
- Advancing health through attention to gender, equity and human rights: stories from the Western Pacific Region. Manila: WHO Regional Office for Western Pacific; 2017 (<https://www.who.int/publications/item/9789290618300>).
- Gendered Health Analysis: COVID-19 in the Americas. Washington DC: Pan American Health Organization; 2021 (<https://iris.paho.org/handle/10665.2/55432>).
- Key Considerations for Integrating Gender Equality into Health Emergency and Disaster Response: COVID-19, 4 June 2020. Washington DC: Pan American Health Organization; 2020 (<https://iris.paho.org/handle/10665.2/52247>).
- Out-of-pocket expenditure: the need for a gender analysis. Washington DC: Pan American Health Organization; 2021 (<https://iris.paho.org/handle/10665.2/54670>).
- A framework for indicators for monitoring gender equality and health in the Americas. Washington DC: Pan American Health Organization; 2019 (<https://iris.paho.org/handle/10665.2/51786>).
- Unpaid health care work: a gender equality perspective. Washington DC: Pan American Health Organization; 2012 (<https://iris.paho.org/handle/10665.2/54847>).
- Guide for analysis and monitoring of gender equity in health policies Washington DC: Pan American Health Organization; 2008 (<https://iris.paho.org/handle/10665.2/49286>).
- UNAIDS and World Health Organization. A tool for strengthening gender-sensitive national HIV and Sexual and Reproductive Health (SRH) monitoring and evaluation systems. Geneva: World Health Organization; 2016 (<https://www.who.int/publications/item/9789241515788>).

- UN Women. Guideline: The Gender Handbook for Humanitarian Action. February 2018 IASC Reference Group on Gender and Humanitarian Action. New York: Inter-Agency Standing Committee; 2017 (<https://www.gihahandbook.org/>).
- Guidelines for integrating gender-based violence interventions in humanitarian action: reducing risk, promoting resilience and aiding recovery. New York: Inter-Agency Standing Committee: 2015 (<https://interagencystandingcommittee.org/working-group/iasc-guidelines-integrating-gender-based-violence-interventions-humanitarian-action-2015>).
- Minimum Initial Service Package (MISP) Resources [database]. New York: Inter-Agency Working Group on Reproductive Health in Crisis; 2023 (<https://iawg.net/resources/minimum-initial-service-package-misp-resources>).
- Simulation exercises [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/emergencies/operations/simulation-exercises>).
- WHO simulation exercise manual: a practical guide and tool for planning, conducting and evaluating simulation exercises for outbreaks and public health emergency preparedness and response. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254741>).
- Guidance for after action review (AAR). Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/311537>).
- Guidance for conducting a country COVID-19 intra-action review. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/333419>)



# 02

## Financing

States Parties should have adequate funding for IHR implementation through the national budget and other mechanisms. The country should have financial resources that can be easily accessible and disbursed for the routine implementation of IHR capacities, preparedness and response to health emergencies, in order to ensure a timely and adequate response.



### IMPACT:

Financial resources are available and agile public financial management systems are in place to enable IHR implementation, including core capacity development and maintenance, as well as for the health emergency response.



### MONITORING AND EVALUATION:

Adequate financial resources are available to enable effective IHR implementation and response to all health emergencies.

BENCHMARK 2. 1: Financing <sup>27</sup> is available and disbursed for the implementation of IHR capacities	
OBJECTIVE: To ensure financing is available for the implementation of IHR capacities	
CAPACITY LEVEL	BENCHMARK ACTIONS
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● No specific budget line or budgetary allocation<sup>28</sup> available to finance the implementation of IHR capacities, or financing is handled through extrabudgetary means or off budget external resources<sup>29</sup>.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Identify and convene key stakeholders to review financing for implementation of IHR capacities from both domestic and/or external sources.</li> <li>● Establish a national coordination mechanism (with drafted ToRs) to coordinate prioritized IHR related funds and corresponding alignment of budget lines allocated to implementation of IHR in relevant sectors at the national level.</li> <li>● Identify different types of budgetary resources available for implementation of IHR capacities (including for capital and recurrent sources of expenditure) and provide recommendations to prioritize IHR implementation actions to match the available funds.</li> <li>● Collate and review cost estimates for the implementation of national action plans relevant to IHR capacities that align with a costed operational national action plan for health security (NAPHS). If a costed operational NAPHS is not available, then develop one with costing experts and focal points of each technical area, as needed.</li> </ul>
<b>03</b> <b>DEVELOPED CAPACITY</b>	<p>Participation and contribution of other sectors to actions: 1, 2, 3, 4</p> <ul style="list-style-type: none"> <li>● Identify and convene key stakeholders who face financial risks linked to health emergencies.</li> <li>● Conduct resource mapping and associated financing advocacy analysis/strategy for the implementation of IHR capacities to determine what activities are being funded, what are the sources of funding (domestic and/or external), and where are the funding gaps across sectors at the national level.</li> </ul>

<sup>27</sup> Financing refers to funds and resources identified, allocated, distributed and executed with regard to activities and interventions. It does not consider costing or identifying how many resources or funds are necessary for the implementation of activities or interventions.

<sup>28</sup> A budget line exists, and a budget is allocated (the budget line is funded).

<sup>29</sup> Accounts held by government bodies, but not included in the government budget.

- Analyse current domestic and external financing for IHR capacities and compare resources available to resource needs to understand funding gaps and opportunities.
- Prioritize, as needed, activities in the national action plan (e.g. NAPHS) and/or operational plans based on estimated costs, expected impacts and available resources and funding.
- Routinely update cost and impact evidence, as well as resource mapping evidence, to allow for reprioritization and reallocation of IHR-related budgets.
- Develop and institute flexible mechanisms for funds disbursement to match evolving needs and allow reallocations as needs change.
- Develop a methodology/framework for monitoring relevant multisectoral IHR related expenditures.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6

## 04 DEMONSTRATED CAPACITY

- Source sufficient<sup>30</sup> budget at national and subnational levels for the implementation of all IHR capacities in relevant ministries or sectors.
- Routinely track IHR budget allocation, disbursement, spending and accounting embedded within routine expenditure monitoring systems to assure funding is disbursed and spent effectively by relevant ministries at national and subnational levels.
- Implement and review the use of available financing and its effectiveness in achieving IHR implementation benchmark actions.
- Conduct a political (i.e. political cycle and budget process) and legal (i.e. legislative and administrative pathways) landscape analysis and impact assessment to build the case for increased investment in the implementation of IHR capacities.
- Accelerate program-based or output oriented budgeting reforms to provide more flexibility and accountability in resource allocation and management.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5

<sup>30</sup> This refers to access to funds by relevant ministries or government bodies for the implementation of all IHR capacities. Sufficiency is measured, where possible, by comparing budget allocation amounts to resource needs identified in national plans related to IHR and/or health security.

## 05 SUSTAINABLE CAPACITY

- Engage a national coordination group in annual operational planning for the implementation of IHR capacities, prepare annual budget requests and advocate for funding levels for relevant ministries or sectors.
- Document and disseminate information on the timely distribution and effective use of funds to strengthen health security capacities at the national and subnational levels in relevant ministries or sectors.
- Develop open access platforms embedded within routine expenditure monitoring and accountability systems to assure transparency and accountability of IHR related budgets.
- Engage relevant sectors regarding multisectoral program-based budgeting for IHR implementation.

Participation and contribution of other sectors to actions:

1, 2, 3, 4

BENCHMARK 2.2: Financing available for timely response to health emergencies <sup>31</sup>	
OBJECTIVE: To put in place financing mechanisms to ensure that funds are available and flexible for timely response to health emergencies	
CAPACITY LEVEL	BENCHMARK ACTIONS
<b>01</b> NO CAPACITY	<ul style="list-style-type: none"> <li>● No mechanism of financing exists to respond to health emergencies.</li> <li>● Funds are allocated and distributed in an ad hoc manner from different sources during health emergencies.</li> </ul>
<b>02</b> LIMITED CAPACITY	<ul style="list-style-type: none"> <li>● Define potential sources of and mechanisms to access general, earmarked or contingency funding to support timely response to health emergencies.</li> <li>● Establish regulations that allow the government to activate emergency funding to respond to health emergencies.</li> <li>● Define protocols for activating emergency funding to respond to health emergencies, including levels of funding and deployment modalities.</li> <li>● Conduct a stakeholder analysis to identify domestic and external partners who can support rapid mobilization of funds during health emergencies.</li> <li>● Identify flexible funding sources and map key decision-makers and processes for reallocation of funds during a health emergency.</li> </ul> <p>Participation and contribution of other sectors to actions: 1, 2, 3, 4, 5</p>
<b>03</b> DEVELOPED CAPACITY	<ul style="list-style-type: none"> <li>● Identify and convene key stakeholders to conduct a legal and regulatory review to understand the various legal mechanisms to access sources of domestic funding in the case of a health emergency.</li> <li>● Establish or make certain any emergency funds that can be accessed for health emergencies and are able to, at bare minimum, support national level urgent responses, and when required a national authority which can coordinate the receipt and distribution of funds to local and subnational levels.</li> <li>● Develop links between domestic and international mechanisms for joint financing of timely response to health emergencies and procurement of key resources, such as personal protective equipment (PPE), medicines and vaccines.</li> </ul>

<sup>31</sup> Defined by the country through a set of triggers that declare a situation as a public health emergency.

- Develop or revise mechanisms and structures to receive and rapidly disburse funds during health emergencies.
- Analyse current health system capacity for routine service continuity during a health emergency and devise a plan to address financial constraints for routine service delivery during a health emergency.
- Review and make recommendations to ensure the functionality of emergency public financing mechanisms (PFM), particularly the mobilization of funds when needed at the national and subnational levels for relevant sectors.
- Develop and share training packages to raise awareness and train relevant stakeholders on PFM to enable timely response to health emergencies.
- Disseminate, build capacity and ensure awareness of exceptions to routine PFM rules for health emergency funding. If external funding is being used for health emergencies, external funding accounting and procurement rules are well understood.
- Demonstrate and document that sources of funding have been identified and could be mobilized in advance of a health emergency.
- Develop mechanisms and guidelines to adapt routine provider payment mechanisms, such as diagnosis related groups, outcomes-based payment, or capitated payments, in a health emergency.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8, 9, 10

- Engage relevant stakeholders, such as civil service commission or national audit authority, to investigate exemptions that could be applicable whenever health emergency funding is released.

## 04 DEMONSTRATED CAPACITY

- Demonstrate that relevant ministries and levels of government have capacity to access and utilize the PFM for early detection, notification, response and recovery operations.
- Develop standard operating procedures (SOPs) to support actors not usually involved with public sector services (e.g. nongovernmental organizations (NGOs) and the private sector) to access emergency funds when needed.
- Develop SOPs or memorandum of understanding (MoUs) that fast track procurement and service agreements (within existing PFM guidelines or approved by finance ministry) that can be activated during emergencies to expedite response.
- Review, with the finance ministry, effectiveness of the emergency financing mechanism following any response to health emergencies and make recommendations to finance ministry to adjust procedures to ensure speed, transparency and accountability of all funds.

- Develop guidance on engaging additional resources called upon as regular or complementary human resources for health to work on addressing the health emergency, including funding to support the efforts of unwaged volunteers.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5

## 05 SUSTAINABLE CAPACITY

- Establish a link and/or MoU with other regional or global emergency contingency funds, through which a national authority can coordinate and distribute funds.
- Establish a mechanism for multisectoral review of functionality and adequacy of health emergency financing whenever the financing is accessed.

Participation and contribution of other sectors to actions:

1, 2

### Tools:

- Delivering global health security through sustainable financing. Geneva: World Health Organization; 2018 (<https://www.who.int/publications/i/item/WHO-WHE-CPI-2018.38>).
- Funding for emergencies [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/emergencies/funding>).
- Health systems strengthening glossary. Geneva: World Health Organization (<https://cdn.who.int/media/docs/default-source/documents/health-systems-strengthening-glossary.pdf>).
- Out-of-pocket expenditure: the need for a gender analysis. Washington DC: Pan American Health Organization; 2021 (<https://iris.paho.org/handle/10665.2/54670>).

# 03

## IHR coordination, national IHR focal point functions and advocacy

States Parties should have multisectoral multidisciplinary approaches through national partnerships that allow efficient alert and response systems for effective implementation of the IHR. The coordination of nationwide resources allows for the sustainable functioning of a National IHR Focal Point – a national centre for IHR communications which is a key obligation of the IHR – that is accessible at all times. States Parties provide WHO with contact details of National IHR Focal Points, continuously update and annually confirm them. Timely and accurate reporting of notifiable diseases, including the reporting of any events of potential public health significance according to WHO requirements and consistent relay of information to the Food and Agriculture Organization of the United Nations (FAO) and the World Organisation for Animal Health (WOAH). Planning and capacity development are undertaken and supported through advocacy measures to ensure high-level support for implementation of IHR.



### IMPACT:

A mechanism for multisectoral multidisciplinary coordination, communication and partnerships to detect, assess and respond to any public health event or risk is in place. A National IHR Focal Point is accessible at all times to communicate with the WHO IHR Regional Contact Points and with all relevant sectors and other stakeholders in the country. The National IHR Focal Points, the WOAH Delegate and WOAH-World Animal Health Information System (WAHIS) National Focal Point (NFP) will have access to a toolkit of best practices, model procedures, reporting templates and training materials to facilitate rapid (within 24 hours) notification of events that may constitute a potential public health emergency of international concern (PHEIC) to WHO and listed diseases to WOAH, as well as be able to respond rapidly (within 24-48 hours) to communications from these organizations. High-level support for implementation of IHR is present within the country.



### MONITORING AND EVALUATION:

(1) A functional multisectoral multidisciplinary mechanism for the coordination and integration of relevant sectors in the implementation of IHR to respond to any public health events. (2) A system to report potential public health events of international concern to WHO and to meet the needs of other official reporting systems, such as WAHIS. (3) Planning and ongoing capacity development efforts with established and effective advocacy mechanisms for implementation of IHR. (4) Mechanisms are regularly tested through exercises with subsequent improvement of arrangements and procedures.



<b>BENCHMARK 3.1: The IHR national focal point (NFP) is fully functional</b> <b>OBJECTIVE: To establish a fully functional IHR NFP</b>	
CAPACITY LEVEL	BENCHMARK ACTIONS
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● IHR NFP does not exist, or consists of one individual, lacks legal authority, capacity and resources to effectively carry out functions.</li> <li>● ToRs describing the mandate, structure, roles and responsibilities of NFP are not in place or are under development.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Designate or establish an office or centre to serve as the IHR NFP in line with Article 4 of the IHR.</li> <li>● Develop ToRs outlining the roles and responsibilities of the IHR NFP in fulfilling relevant obligations of the IHR.</li> <li>● Maintain and regularly update a contact directory including all members of NFP and capacitate NFP to be available 24 hours a day, seven days a week (24/7) in line with Article 4 of the IHR and share with the World Health Organization (WHO) and relevant partners.</li> <li>● Develop and test SOPs for communicating and coordinating with WHO, including triggers and processes for notification, verification and reporting in line with Annex 2 of the IHR.</li> <li>● Develop and test SOPs for communication among relevant sectors, including thresholds for reporting, response, coordination and communication mechanisms during health emergencies.</li> <li>● Develop and implement an IHR NFP training package for NFP unit staff.</li> <li>● Provide annual reporting to the World Health Assembly on IHR capacity development, in line with IHR obligations.</li> <li>● Develop processes to complete and submit the States Parties Self-Assessment Annual Report (SPAR) Tool in line with Article 54 of the IHR.</li> </ul> <p>Participation and contribution of other sectors to actions:</p> <p>1, 2, 3, 4, 5, 6, 7, 8</p> <ul style="list-style-type: none"> <li>● Designate focal points in relevant sectors to work closely and regularly communicate with IHR NFP.</li> <li>● Raise awareness about SOPs for communication in relevant sectors to share information on urgent events, including those which meet thresholds for reporting and response by IHR NFP.</li> </ul>

## 03 DEVELOPED CAPACITY

- Develop policy to designate or establish the IHR NFP, with legal authority to conduct activities in accordance with IHR requirements.
- Establish IHR NFP and share ToRs describing the roles and responsibilities of the IHR NFR at all levels (i.e. senior and technical) within the ministry where the IHR NFP is located.
- Implement SOPs on communication and coordination between NFPs and WHO including triggers and processes for notification, verification and reporting based on relevant articles of the IHR, and review performance regularly.
- Implement SOPs for communicating between NFP and relevant sectors (e.g. those responsible for surveillance and reporting, points of entry, public health services, clinics and hospitals and other government).
- Develop and test SOPs for communication and coordination between the NFP and nongovernmental agencies, including media and civil society communication channels (e.g. website updates or newsletters), to apprise relevant sectors, media and civil society on developments related to IHR implementation.
- Regularly test the processes of the IHR NFP for health emergency management, coordination, multisectoral collaboration and communication through actual experience and/or scenarios for different types of health emergencies<sup>32</sup>.
- Regularly assess staffing and funding needs to maintain a functional IHR NFP and allocate sufficient funds for IHR NFP to perform the basic functions required by the IHR for reporting and response to health emergencies.
- Conduct IHR NFP-led orientation events for relevant stakeholders and sectors.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8

- Update regularly the IHR NFP list of focal points in relevant sectors.

## 04 DEMONSTRATED CAPACITY

- Raise and maintain awareness about the functions of the IHR NFP among senior leadership and technical levels across relevant government sectors through briefing and dissemination of materials.
- Increase IHR awareness among communities, partners and the media by organizing information and education campaigns and consider adding IHR NFP awareness and training to postgraduate curricula for public health and other relevant educational disciplines.
- Conduct SimEx/AAR/IAR (as relevant) to monitor and evaluate the functionality of IHR NFP at national and levels, and apply lessons learned to prioritize actions within relevant national action plans.

<sup>32</sup> Such as disease outbreaks, mass gatherings, intentional biological incidents, chemical events, radiological emergencies.

- Develop guidance on engaging additional resources called upon as regular or complementary human resources for health to work on addressing the health emergency, including funding to support the efforts of unwaged volunteers.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8

## 05 SUSTAINABLE CAPACITY

- Dedicate sustained resources (i.e. financial, human and technical) that are accessible and available for IHR NFP activities.
- Facilitate continuous quality improvement of IHR NFP functionality by leading national multidisciplinary risk assessment processes in line with Annex 2 of the IHR.
- Regularly monitor cross-sectoral surveillance mechanisms and evaluate the response to health emergencies at national and subnational levels.
- Identify, document and address key bottlenecks and gaps in IHR NFP functionalities based on M&E results.
- Document and share lessons learned and best practices related to IHR NFP.
- Facilitate and engage country in peer-to-peer learning programmes at the subnational, national and international levels.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6

<b>BENCHMARK 3.2: Multisectoral IHR coordination mechanism effectively supports the implementation of prevention, detection and response activities</b>	
<b>OBJECTIVE: To establish a multisectoral IHR coordination mechanism to support the implementation of prevention, detection and response activities</b>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● No multisectoral coordination mechanism exists.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Define the scope of a multisectoral coordination committee and conduct a stakeholder analysis to identify key entities that should be involved in a multisectoral coordination mechanism for IHR.</li> <li>● Establish a multisectoral coordination committee that meets regularly to discuss and promote IHR issues and establish, activate and maintain the mechanism.</li> <li>● Draft ToRs that specify how the multisectoral coordination committee and operations of the multisectoral coordination mechanism reinforce priorities of the IHR NFP.</li> <li>● Develop a work plan that specifies priority functions and activities of the multisectoral coordination mechanism to develop a protocol, ToRs and identify resources needed for the mechanism (including among private organizations and NGOs).</li> <li>● Conduct an IHR performance of veterinary services (PVS) National Bridging Workshop, document findings and incorporate into multisectoral coordination mechanism to address zoonoses.</li> </ul> <p>Participation and contribution of other sectors to actions: 1, 2, 3, 4, 5</p> <ul style="list-style-type: none"> <li>● Designate focal points in relevant sectors to participate in the multisectoral coordination committee.</li> <li>● Participate in the IHR-PVS National Bridging Workshop by veterinary services and other relevant sectors.</li> <li>● Conduct a World Organisation for Animal Health (WOAH) PVS evaluation, document findings and incorporate into multisectoral coordination mechanism to address zoonoses and other existing or new events at the human-animal interface.</li> </ul>

## 03 DEVELOPED CAPACITY

- Conduct regular meetings of the multisectoral coordination mechanism to advance its mandate and trigger action, ensuring that outcomes of these meetings are promoted among external and internal stakeholders across sectors at the national level.
- Sensitize stakeholders from national level ministries, agencies, departments and partners to the purpose, role and priorities of the multisectoral coordination mechanism and committee.
- Mobilize the multisectoral coordination mechanism at national level by enacting formal MoUs or other formal and legal documents with multisectoral stakeholders whose engagement in IHR implementation is necessary.
- Develop and test a system to assess how the multisectoral coordination mechanism is working to address zoonotic diseases, food safety and other existing or new health events at the human-animal interface at national and subnational levels.
- Host trainings for experts from relevant sectors on the IHR aimed at promoting multisectoral coordination in IHR implementation.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5

- Institutionalize One Health coordination mechanisms (One Health platform/committee).

## 04 DEMONSTRATED CAPACITY

- Conduct regular meetings of the multisectoral coordination mechanism to advance its mandate and trigger actions, ensuring that outcomes of meetings are promoted among external and internal stakeholders across sectors at the national and subnational levels.
- Mobilize the multisectoral coordination mechanism at subnational level by enacting formal MoUs or other formal and legal documents with intermediate multisectoral stakeholders whose engagement in IHR implementation is necessary.
- Routinely monitor and evaluate the functionality of the multisectoral coordination mechanism at both the national and subnational levels through systematic approaches, such as routine data collection and SimEx/AAR/IAR (as relevant).
- Document and disseminate evidence on how effective the multisectoral coordination mechanism is working to manage cross-sectoral public health issues (foodborne diseases, zoonotic diseases, etc.).
- Develop a system to assess how multisectoral coordination mechanism is working to address chemical safety among stakeholders from relevant sectors at national and subnational level.

<p><b>05</b> <b>SUSTAINABLE CAPACITY</b></p>	<ul style="list-style-type: none"> <li>● Develop a budget for sustained operation of multisectoral coordination mechanism and advocate for its full adoption.</li> </ul> <p>Participation and contribution of other sectors to actions: 1, 2, 3, 4, 5, 6</p> <ul style="list-style-type: none"> <li>● Allocate funding for sustained operation of the multisectoral coordination mechanism.</li> <li>● Routinely revise or update existing strategies, guidelines and SOPs for the multisectoral coordination mechanism based on lessons learned from M&amp;E.</li> <li>● Develop a system to assess how the multisectoral coordination mechanism is working to address radiation emergencies among stakeholders from relevant sectors and safety authorities at national and subnational level.</li> <li>● Document and share best practices for multisectoral coordination mechanism, and engage country in peer-to-peer learning programmes at the subnational, national and international levels.</li> </ul> <p>Participation and contribution of other sectors to actions: 1, 2, 3, 4</p>
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<b>BENCHMARK 3.3: Strategic planning for IHR, preparedness or health security are in place and supported by functional advocacy mechanisms for IHR implementation</b> <b>OBJECTIVE: To develop, implement and monitor a national action plan for IHR, preparedness or health security and ensure functional advocacy mechanisms for high level support of health emergency preparedness and IHR implementation</b>	
CAPACITY LEVEL	BENCHMARK ACTIONS
<b>01</b> <b>NO CAPACITY</b>	<p><b>Strategic planning</b></p> <ul style="list-style-type: none"> <li>● There is no national action plan for IHR, preparedness or health security.</li> </ul> <p><b>Advocacy for IHR implementation</b></p> <ul style="list-style-type: none"> <li>● Planning and capacity development for IHR implementation is not supported by advocacy mechanisms or activities are conducted on an ad hoc basis.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<p><b>Strategic planning</b></p> <ul style="list-style-type: none"> <li>● Identify gaps in health emergency preparedness and IHR implementation by synthesizing results from recent IHR monitoring and evaluation framework (MEF) approaches, assessments and implementation data from existing plans.</li> <li>● Convene technical area leads to prioritize actions based on synthesized results and recommendations and establish a multisectoral working group to develop national action plan for IHR, preparedness or health security.</li> <li>● Compile priority actions into a draft national action plan for implementation, cost the plan and map financial and technical gaps as well as available resources to support implementation.</li> </ul> <p><b>Advocacy for IHR implementation</b></p> <ul style="list-style-type: none"> <li>● Conduct stakeholder analysis and mapping to identify actors (ranging from technical area implementers to high level decision-makers) from the public and private sectors who are relevant to improving national capacity for IHR implementation.</li> <li>● Conduct a situational analysis to understand current awareness and contribution to health emergency preparedness and IHR implementation from key policy influencers and national level decision-makers to identify the degree of priority given at the governance level of the country to health security.</li> <li>● Analyse government policy, priority guidelines of the national government and annual budget allocations in relation to health emergency preparedness and IHR implementation.</li> </ul>

- Identify advocacy objectives based on evidence analysis to achieve policy changes and develop an advocacy strategy for gaining whole-of-government and whole-of-society commitments to health emergency preparedness and IHR implementation.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7

## 03 DEVELOPED CAPACITY

### Strategic planning

- Engage the multisectoral working group to finalize a national action plan for IHR, preparedness or health security, involving relevant sectors across the government.
- Identify offices and individuals in the government who can promote and/or provide avenues for promotion of national action plans (such as NAPHS) and IHR implementation.
- Engage high level decision-makers to obtain formal endorsement and adoption of the national action plans (such as NAPHS).
- Disseminate national action plans (such as NAPHS) to all departments, ministries, agencies and partners responsible for implementation.
- Confirm availability and accessibility of the national action plans (such as NAPHS) for stakeholders as well as any guidelines and SOPs needed for IHR implementation.

### Advocacy for IHR implementation

- Develop and disseminate advocacy messages and materials for raising awareness across government and at all levels on the national action plans (such as NAPHS) and importance of IHR implementation to the country (e.g. by introducing IHR implementation and health emergency preparedness as an economic case).
- Identify and utilize effective advocacy channels, mechanisms, people or groups who can lead disseminating advocacy messages and materials, including media, at national level.
- Develop training materials to improve advocacy capacity for IHR implementation among key stakeholders in relevant sectors and advocacy groups at national level.



- Prepare and disseminate to national level decision-makers, including situational updates and advocacy messages pertaining to health security concerns, health emergency preparedness and IHR implementation before parliamentary engagements.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8, 9

- Support dissemination of advocacy messages, through effective advocacy channels of the relevant sector, to the highest-level authorities, decision-makers and relevant ministers to improve compliance with multisectoral action for IHR implementation.
- Dedicate time in the national governance body (such as parliament) to discuss health emergency preparedness, health security and IHR implementation.
- Participate in relevant advisory committees/steering committees of relevant sectors and ministries.
- Apply a whole-of-government and whole-of-society approach (including private sector) to identify stakeholders who can contribute to the promotion of IHR implementation.

## 04 DEMONSTRATED CAPACITY

### Strategic planning

- Develop a plan for routine monitoring and accountability for implementation of the national action plans (such as NAPHS).
- Develop processes to incorporate SPAR, Joint External Evaluation (JEE), SimEx/AAR/IAR results (as relevant), recommendations and gaps national action plans (such as NAPHS).
- Define the processes for routine implementation tracking to ensure accountability among stakeholders and includes the key elements of data-driven decision-making: collection, collation, analysis and dissemination of data.
- Organize regular SimEx/AAR/IAR (as relevant) as part of the IHR MEF programme for assessing the potential functionality of IHR capacities to prevent, detect and respond to health emergencies. Ensure that outcomes and key findings are shared with all relevant stakeholders and that plans are updated accordingly, based on outcomes and recommendations.

### Advocacy for IHR implementation

- Conduct a situational analysis to identify gaps in IHR implementation at subnational and local levels that require influence from political authorities and decision-makers.
- Expand and adapt national advocacy strategies to subnational and local levels to disseminate key messages and materials and activate political will for health emergency preparedness and IHR implementation.

- Conduct training on advocacy for IHR implementation and health emergency preparedness for key stakeholders in relevant sectors at the subnational level. Develop a budget for sustained operation of multisectoral coordination mechanism and advocate for its full adoption.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7

- Provide support, by relevant sectors, at subnational level for advocacy mechanism for health emergency preparedness and IHR implementation through sector-specific advocacy channels to improve compliance for IHR implementation.

### **Strategic planning**

- Review implementation progress for the national and subnational (if applicable) action plans on a quarterly basis to identify key implementation successes, gaps and recommendations for addressing gaps.
- Regularly (i.e. quarterly) update all relevant stakeholders, ranging from implementers to high level decision-makers, on key implementation progress, barriers and recommendations for improvement.
- Facilitate annual reviews of national action plans (such as NAPHS) to ensure that it is updated, costed and resourced each year, based on implementation data and recommendations drawn from other capacity assessments.
- Develop policies to support the development and implementation of national action plans for IHR implementation, preparedness and/or health security.
- Document and share best practices, challenges and lessons learned related to national action plans (such as NAPHS) development, implementation and advocacy across relevant sectors and with other countries through bilateral and international engagements, including capacity-building programmes.

### **Advocacy for IHR implementation**

- Collaborate with advocacy experts to influence policy-makers and decision-makers at all levels to ensure that health emergency preparedness and IHR implementation remain a priority in the political agenda, with whole-of-government and whole-of-society approaches.
- Advocacy strategies and mechanisms are reviewed and updated regularly.
- Routinely assess and annually update and allocate resources for advocacy strategies at the national and subnational levels.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8

## **05** **SUSTAINABLE** **CAPACITY**

## Tools:

- National IHR focal points [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/teams/ihr/national-focal-points>)  
*Includes links to National IHR Focal Point Guide*
- WHO guidance for the use of Annex 2 of the International Health Regulations (2005). Geneva: World Health Organization; 2010 ([https://www.who.int/publications/m/item/who-guidance-for-the-use-of-annex-2-of-the-international-health-regulations-\(2005\)](https://www.who.int/publications/m/item/who-guidance-for-the-use-of-annex-2-of-the-international-health-regulations-(2005))).
- IHR-PVS National Bridging Workshops [database]. Geneva: World Health Organization; 2023 (<https://extranet.who.int/sph/ihr-pvs-bridging-workshop>).
- Bridging capacities between animal and human health sectors [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/activities/bridging-human-and-animal-health-sectors>)
- Members [website]. Paris: World Organisation for Animal Health; 2023 (<https://www.woah.org/en/who-we-are/members/>).
- Simulation exercises [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/emergencies/operations/simulation-exercises>).
- WHO simulation exercise manual: a practical guide and tool for planning, conducting and evaluating simulation exercises for outbreaks and public health emergency preparedness and response. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254741>).
- Guidance for after action review (AAR). Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/311537>).
- Guidance for conducting a country COVID-19 intra-action review. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/333419>)

# 04

## Antimicrobial resistance

A functional system is in place for the national response to prevent and combat antimicrobial resistance (AMR) with a One Health approach, including:

- Multisectoral work spanning human, animal, agriculture, food safety and environmental aspects, which comprises of developing and implementing a national action plan to combat AMR consistent with the Global action plan on antimicrobial microbial resistance.
- Surveillance capacity for AMR and antimicrobial consumption at the national level in accordance with internationally agreed systems such as the WHO Global antimicrobial resistance surveillance system (GLASS), the WOAH Global database on use of antimicrobial agents in animals, and the FAO Antimicrobial resistance monitoring (InFARM) system and IT platform.
- Prevention of AMR emergence and transmission in healthcare facilities, food production and the community, through infection prevention and control (IPC) measures.
- Ensuring appropriate use of antimicrobials, including assuring quality of available medicines, conservation of existing treatments and access to appropriate antimicrobials when needed, while reducing inappropriate use.
- Increasing awareness and engaging the community in activities related to combating AMR in humans and animals, with focus on outreach approach for farmers and rural communities.

The JEE tool reviews the country's self-assessed response to the annual global monitoring survey on AMR (Tracking AMR Country Self-assessment Survey (TrACSS)).



### **IMPACT:**

Decisive and comprehensive action to prevent the emergence and reduce the spread of AMR. Countries will, in line with the Global action plan on AMR, increase awareness of AMR risks and how to respond to them, such as:

- Strengthening surveillance and laboratory capacity;
- Enhancing IPC measures in relevant sectors;
- Ensuring uninterrupted access to essential antimicrobials of assured quality;
- Regulating and promoting the appropriate use of antimicrobials in human medicine, animal health, agriculture, food production and other fields as appropriate; and
- Supporting initiatives to foster the development and appropriate use of new antimicrobial agents, vaccines and diagnostic tools.



### **MONITORING AND EVALUATION:**

(1) A multisectoral national action plan to combat AMR has been produced and made public. (2) Implementation of the AMR national action plan and sector-specific plans, with monitoring and yearly reporting on progress (including reporting to the international level) in place.

<b>BENCHMARK 4.1: Effective multisectoral coordination for antimicrobial resistance (AMR)</b> <b>OBJECTIVE: To develop and implement a multisectoral national action plan on AMR</b>	
CAPACITY LEVEL	BENCHMARK ACTIONS
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● No national action plan for AMR and no formal multisectoral governance or coordination mechanism on AMR.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Establish a national AMR focal point to serve as a coordinating office for AMR within the health ministry or other relevant ministry.</li> <li>● Identify key stakeholders and AMR leads across relevant ministries and sectors to establish a national multisectoral AMR coordination committee.</li> <li>● Initiate joint development of a national multisectoral AMR action plan (AMR NAP) based on situational analysis, to identify major risks for occurrence and transmission and include a review of relevant existing regulations and policies.</li> <li>● Identify programmes and priority activities to be included in the AMR NAP, aligned with the AMR Global Action Plan and for development or scale up.</li> <li>● Involve AMR experts in the development of national health policies, strategies and plans (NHPSPs) to strengthen health system capacities to manage and integrate AMR activities.</li> <li>● Advocate for political commitment to call for and support active participation of all relevant ministries in the national multisectoral AMR coordination committee.</li> </ul> <p>Participation and contribution of other sectors to actions: 1, 2, 3, 4, 5, 6</p> <ul style="list-style-type: none"> <li>● Identification of AMR focal points within and by relevant sectors.</li> </ul>

## 03 DEVELOPED CAPACITY

- Develop ToRs for a multisectoral coordination committee, with defined lines of accountability, funding for committee activities and regular meetings (at least four per year) to review AMR NAP implementation.
- Complete the development of the multisectoral AMR NAP with prioritized activities to address AMR in line with the AMR Global Action Plan<sup>33</sup>.
- Submit the AMR NAP for official endorsement through relevant governance mechanisms (e.g. office of the head of state, cabinets, and health and agriculture ministries).
- Enhance internal health sector coordination between stakeholders for AMR, universal health coverage (UHC), primary health care (PHC) and health emergencies.
- Train staff from relevant ministries and sectors on leadership skills for effective multisectoral collaboration and coordination needed to develop, implement and monitor joint plans and activities..

Participation and contribution of other sectors to actions:

1, 2, 3, 5

- Assess existing capacities for awareness, training, surveillance, infection prevention and control (IPC), and stewardship of antibiotic use in and by relevant sectors.
- Assess existing data and information systems for collecting recommended indicators in national sector-specific plans.
- Active contribution from civil society partners, academic and research institutions, and other relevant professional organizations in the development and implementation of the national AMR NAP.

## 04 DEMONSTRATED CAPACITY

- Solicit the national government's official endorsement of AMR NAP.
- Identify priority actions (based on risk and feasibility) from the AMR NAP, develop a costed implementation plan with engagement of responsible agencies with established timelines, and begin implementation of actions.
- Identify and map required financial resources to implement and monitor prioritized activities in the multisectoral AMR NAP.
- Develop and implement the multisectoral AMR NAP M&E framework.
- Review AMR NAP implementation progress through regular meetings of the national AMR coordination committee, and provide reports aligned with the annual tracking AMR country self-assessment survey (TrACSS).
- Develop capacities to collect, analyse and report on recommended indicators of the national action plan M&E framework and relevant Sustainable Development Goals indicators.

<sup>33</sup> WHO Global action plan on antimicrobial resistance.

- Train staff in relevant sectors to support implementation of the AMR NAP.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7

- Build sector-specific capacities to collect, analyse and report on M&E indicators monitored by the AMR coordination committee.

- Incorporate prioritized AMR activities into national plans and budgets of relevant programmes and agencies, and allocate adequate funding.

- Regularly evaluate implementation of AMR NAP through M&E, involving relevant sectors and the multisectoral AMR coordination committee, to jointly update plans and submit data on progress to regional and global levels accordingly.
- Dedicate senior level leadership for the AMR multisector coordination committee and empower it to hold partnering sectors accountable for the delivery of clearly specified actions and targets.
- Embed specific AMR relevant interventions in national strategies and associated budgets for health systems strengthening (e.g. PHC and UHC), as well as national pandemic preparedness plans, response strategies and budgets.
- Document and disseminate lessons learned from efforts for effective multisectoral coordination on AMR and the AMR NAP implementation, including addressing inequities associated with gender, disability and social inclusion.
- Develop capacity to monitor and address social and economic inequities with regards to AMR interventions in relevant sectors.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6

- Embed and promote AMR interventions in relevant, sector-specific national strategies and budgets and include in national and international development financing proposals.

## 05 SUSTAINABLE CAPACITY



#### **BENCHMARK 4.2: A surveillance system for AMR is in place**

**OBJECTIVE: To develop national AMR surveillance systems across sectors (human health, animal health and agriculture) for surveillance of pathogens of concern and to facilitate data sharing and joint analysis for action**

#### **CAPACITY LEVEL**

#### **BENCHMARK ACTIONS**

**01**  
**NO CAPACITY**

- No or limited capacity for generating, collating and reporting data (e.g. antibiotic susceptibility testing (AST) and accompanying clinical and epidemiological data).

**02**  
**LIMITED CAPACITY**

- Designate a national coordinating centre to oversee the development and functioning of the national AMR surveillance system with epidemiological, information technology (IT) and data management capacities, with a designated a focal point for the WHO Global Antimicrobial Resistance and Use Surveillance System (GLASS) and other international AMR surveillance networks the country collaborates with.
- Define national AMR surveillance objectives in accordance with AMR national action plan objectives and cost planned activities.
- Complete an assessment of existing laboratory capacities for identifying and performing AST for common bacteria, fungal pathogens and Mycobacterium tuberculosis.
- Designate a national reference laboratory to support AMR surveillance based on an assessment of existing microbiology laboratory capacities in the country.
- Designate, based on the assessment of microbiology lab capacities, laboratories to support the national AMR surveillance and secure laboratory reagents to detect and report on at least some priority AMR pathogens.
- Develop and initiate training programmes for diagnostic stewardship, data collection and reporting on AMR at national and subnational levels.
- Define laboratory standards and capacity requirements for laboratories to participate in the national AMR surveillance, including identifying and performing AST for targeted pathogens.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7

- Identify all laboratories that can contribute to an integrated AMR surveillance system using a One Health approach, including food monitoring, animal health, environmental and other sectors.

- Designate national focal points for the International Food and Agriculture Organization of the United Nations' (FAO) Antimicrobial Resistance Monitoring System (InFARM) covering AMR surveillance domains in food and agriculture.

- Designate national reference laboratories for AMR surveillance based on assessments of existing microbiology capacity.

## 03 DEVELOPED CAPACITY

- Establish an external quality assessment programme for the national reference laboratory and ensure that it can conduct confirmatory or additional testing.

- Provide adequate equipment, procurement, maintenance and supplies for laboratories supporting AMR surveillance and notification of AMR events.

- Develop a national surveillance protocol including surveillance targets, laboratory standards, priority specimens, pathogens and drug– bug combinations, sampling strategy, defined datasets, metrics, data production, analysis and reporting, quality management and M&E.

- Identify functional AMR surveillance sites in the health sector and in foods production chains to ensure national or subnational representativeness.

- Initiate AMR surveillance at pilot or representative regional and referral hospitals.

- Train sufficient staff to collect, analyse and report AMR data.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 6

- Define sectoral AMR surveillance objectives and develop a sectoral AMR surveillance strategy aligned with national AMR surveillance.

- Define standards and capacity requirements for laboratories to participate in sectoral AMR surveillance.

- Develop steps to strengthen laboratory capacities for identifying and performing AST for targeted pathogens.

## 04 DEMONSTRATED CAPACITY

- Establish a national AMR surveillance system including SOPs, protocols and databases for surveillance data, a system for reporting to ministries of health and agriculture, and a mechanism to analyse data and report back to facilities and WHO.

- Establish an external quality assessment programme for all laboratories generating data for AMR surveillance, to evaluate and provide feedback on capacities to identify and perform AST for targeted pathogens.

- Expand AMR testing and surveillance to include other clinical sites and/or other components of the country's health system (e.g. private sector).

- Collect population-based denominators, such as those recommended by GLASS.
- Perform AMR data analyses and disseminate regular reports from the AMR surveillance national coordinating centre.
- Establish mechanisms for AMR surveillance, data sharing and joint review across sectors.
- Establish capacities to perform and analyse molecular tests for AMR, at least within the national reference laboratory.
- Conduct SimEx/AAR/IAR (as relevant) to test the functionality of AMR surveillance systems.

Participation and contribution of other sectors to actions:

1, 2, 5, 6, 7, 8

- Develop strong animal, plant health and agricultural practices for AMR surveillance by implementing standards defined by WOH and FAO, including the Codex Alimentarius.
- Regularly evaluate laboratory capacities to identify and perform AST for targeted pathogens.

## 05 SUSTAINABLE CAPACITY

- Enhance monitoring of antibiotic resistance patterns.
- Disseminate reports indicating the proportion of AMR pathogens among specimens or isolates, results from participation in international external quality assessment rounds of the national reference laboratory, and incidence of infections caused by AMR pathogens at sentinel sites (community- and hospital-acquired).
- Use surveillance data to implement policy changes, develop new legislation or update existing legislation, improving facilities and adapting prevention and control strategies.
- Revise and update AMR surveillance strategies, guidelines, operational plans and SOPs based on lessons learned (from M&E) and ensure follow up of the implementation of M&E recommendations.
- Regularly share AMR surveillance data across sectors, analyse relevant AMR data for policy-making and contribute to international surveillance information sharing and risk assessments for AMR.
- Define and allocate a multiyear budget for AMR surveillance.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6

- Update sector-specific plans and integrated mechanisms based on feedback from AMR surveillance data analysis and results from M&E of the national surveillance system.
- Designate international (e.g. FAO/WHO/WOAH) reference laboratories to support relevant sectors conducting regional and global AMR surveillance based on assessments of technical capacities and global collaboration.

### BENCHMARK 4.3: Effective mechanisms are in place to prevent multidrug resistant organisms (MDRO)

OBJECTIVE: To strengthen mechanisms for preventing MDRO

#### CAPACITY LEVEL

#### BENCHMARK ACTIONS

**01**  
NO CAPACITY

- Priority MDRO pathogens (phenotypes and genotypes) have not been identified by national authorities, and MDRO pathogens are not detected.

**02**  
LIMITED  
CAPACITY

- Perform a situational analysis and document current efforts on MDRO prevention in the country.
- Map key stakeholders for MDRO prevention with a One Health approach and involvement from the AMR coordination committee and IPC programme.
- Mandate the IPC programme to develop an action plan and lead activities to prevent MDRO in close collaboration and consultation with the AMR coordination committee, the AMR national reference laboratory and other relevant stakeholders.
- Integrate MDRO prevention into the country's overall IPC strategy and programme, ensuring alignment with WHO minimum requirements for IPC with involvement of all relevant stakeholders, and design measures to prevent MDRO in both health facilities and community settings.
- Identify, in consultation with the AMR coordination committee, priority AMR types that are associated with common infections and create a list of priority MDRO.
- Develop training materials on MDRO prevention including the roles and responsibilities of clinicians, laboratory technicians and other relevant professionals, and integrate into existing IPC and AMR training packages.
- Develop surveillance and laboratory capacities to identify groups at risk for MDRO.

**03**  
DEVELOPED  
CAPACITY

- Officially circulate the standard definition of MDRO to all health facilities to align prevention activities accordingly.
- Improve awareness of priority MDRO at all health facilities (including both public and private sector facilities and laboratories) and in community settings, and provide training on MDRO prevention for relevant officials at national level.
- Implement a strategy and action plan to prevent MDRO at national level (embedded in the overall IPC strategy) and develop, endorse and disseminate a standard protocol for containing MDRO outbreaks..

- Collaborate with AMR and IPC programmes to apply available evidence to guide MDRO prevention activities and understand effective prevention methods that extend beyond the AMR domain.
- Improve health facility capacities to characterize AMR pathogens causing human infections, systematically report to the national level and identify reference laboratories to provide confirmatory testing for exceptional phenotypes.

## 04 DEMONSTRATED CAPACITY

- Implement national strategy and action plan on MDRO prevention at all levels.
- Conduct training on MDRO prevention for all relevant health workers at all levels.
- Design a mechanism for timely detection, reporting, risk assessment and monitoring of novel, re-emerging and priority MDRO in the country, and strengthen capacities for the national focal point to track and provide support for MDRO incidents.
- Establish and use indicators and monitoring systems to regularly assess implementation of the MDRO prevention strategy, action plan and MDRO risk assessment activities at national and facility levels.
- Conduct MDRO related research studies to generate local evidence to inform strategies, protocols and action.
- Improve IPC strategy implementation in both public and private health facilities to prevent and control MDRO infections in alignment with WHO core components for effective IPC programmes.
- Implement systematic monitoring and reporting of AMR infections by the national body responsible, including a framework for early reporting of any unusual antimicrobial susceptibility profile to WHO's Global Antimicrobial Resistance and Use Surveillance System - Emerging Antimicrobial Resistance Reporting (GLASS-EAR) framework.

## 05 SUSTAINABLE CAPACITY

- Conduct regular M&E for detection, timely notification of priority and novel MDRO within facilities and at the national level.
- Enforce adherence to IPC protocols and interventions in all hospitals to prevent and respond to priority MDRO pathogens in a timely manner.
- Assess compliance with protocols and put in place mechanisms to strengthen implementation accordingly.
- Define indicators and patient populations based on local epidemiology, risk assessment and resource availability to perform surveillance cultures including asymptomatic colonization with MDRO.
- Communicate pertinent MDRO data to local referral networks to inform prevention and containment efforts at health facilities.

<b>BENCHMARK 4.4: Optimize use of antimicrobial medicines in human health</b> <b>OBJECTIVE: To ensure appropriate use of all antimicrobials in humans</b>	
CAPACITY LEVEL	BENCHMARK ACTIONS
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● No or weak policy and regulations on appropriate use, availability and quality of antimicrobials for human health.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Establish and endorse, by the national AMR coordination committee, a national working group (with ToRs) of experts from relevant authorities and designate a national focal point for surveillance and optimal use of antimicrobials.</li> <li>● Assess the national medicines strategy including regulatory framework, selection on the essential medicines list, supply chain management, stewardship, rational use plans and strategies, and activities focusing on antimicrobial medicines.</li> <li>● Assess existing mechanisms for monitoring antimicrobial consumption<sup>34</sup> (AMC), define objectives according to aims and targets of the AMR NAP, and identify relevant actors and sources of data.</li> <li>● Develop methods to collect relevant AMC data including piloting of methods.</li> <li>● Develop a draft national antimicrobial stewardship (AMS) plan or strategy and national legislation that regulates use, access and quality of antimicrobials.</li> <li>● Identify AMS training and educational needs of health workforce, both in preservice and in-service education and training.</li> </ul> <p>Participation and contribution of other sectors to actions:</p> <p>1, 2, 3, 4, 5, 6</p> <ul style="list-style-type: none"> <li>● Involvement from public and private sector stakeholders in the activities of the dedicated national working group.</li> <li>● Share relevant plans/strategies, training &amp; educational resources and assessment tools for AMS between sectors.</li> </ul>

<sup>34</sup> Antimicrobial consumption: The term consumption refers to estimates that are derived from aggregated data sources (mainly import and domestic manufacturing, sales or reimbursement data) and serves as proxy for actual use of antibiotics.

## 03 DEVELOPED CAPACITY

- Establish a national AMC surveillance system to monitor and report national AMC data based on the Access, Watch, Reserve (AWaRe) classification.
- Adopt the AWaRe classification for antibiotics into the national essential medicines list.
- Develop protocols and tools for monitoring antimicrobial use<sup>35</sup> (AMU) in hospitals to inform AMS.
- Develop or review the national regulatory framework for appropriate access to and use of quality assured antimicrobials in humans, ensuring that economic incentives are accounted for in medicines reimbursement lists.
- Enact legislation and regulations on import, marketing authorization, production, selection, prescribing and sale of antimicrobials.
- Develop or update and disseminate national AMS plan and clinical treatment guidelines that consider the essential medicines list and apply the AWaRe classification for antibiotics.
- Implement AMS programmes and practices in designated health facilities, including training, monitoring, communication and identification of required budget.
- Establish systems to ensure AMS elements are included in pre-service and in-service training curricula for health professionals.
- Conduct periodic knowledge, attitude and practice surveys of health professionals to better understand drivers of prescribing and dispensing behaviours.
- Develop materials for sensitizing experts in both public and private health sectors and raise community awareness of appropriate antimicrobial medicine use.

Participation and contribution of other sectors to actions:

1, 4, 5, 8, 9

- Participate in AMS training programmes implemented in relevant sectors.
- Share methods and tools for monitoring AMC for standardization and comparability across the human, animal, agricultural and environmental health sectors.

<sup>35</sup> Antimicrobial use: Data on antibiotic use refers to estimates derived from individual patient level data, and may be accompanied by information on patient characteristics and indication of treatment.



## 04 DEMONSTRATED CAPACITY

- Monitor and regularly report on AMC disaggregated by health sector and level when possible.
- Perform ad hoc surveys on antimicrobial use in hospitals as part of AMS programmes.
- Set national targets for improvement, including the target of AWaRe Access group of antibiotics consisting of <sup>3</sup> 60% of total antibiotic consumption and reported globally.
- Consistently update regulatory and legal frameworks for appropriate use and access to affordable quality assured antimicrobials including: enforcement of prescription only antibiotics, regulation of promotional tactics for antimicrobials by pharmaceutical companies, draft/review of the national medicine prescription and access policy for optimizing use by detecting and correcting issues leading to shortages.
- Expand AMS activities to all health facilities, monitor and evaluate stewardship programmes including the analysis of AMR, consumption and usage data, and provide recommendations for strengthening AMS programmes.
- Train a sufficient number of health workers, including public health professionals and community health workers at the national and health facility level (including all types of health facilities), on AMS and AMR, as well as AMC and AMU surveillance.
- Develop a list of behavioural change targets to ensure responsible and appropriate AMU in health facilities and the community, and design strategies to facilitate behaviour change.
- Develop a system to monitor antibiotic quality and identify substandard and/or falsified medicines.

Participation and contribution of other sectors to actions:

3, 4, 7, 8

- Participate in education campaigns for raising community awareness on the appropriate use of antimicrobial medicines.
- Produce regular reports on AMC in animal, agricultural and environmental sectors, ensure data sharing is in place across sectors, and share publicly.
- Implement regulatory and legal frameworks to ensure that critically important antimicrobials (highest priority and high priority) are used in a prudent manner.



## 05 SUSTAINABLE CAPACITY

- Continue to monitor AMS activities and ensure AMS is a part of all relevant national policies and standards, including curriculum standards for healthcare professionals, accreditation standards for health facilities and national health policies, strategies and plans.
- Maintain the national regulatory framework for appropriate use of affordable, quality assured antimicrobials, including monitoring of prescription only sales of key antibiotics.
- Evaluate routine surveillance for AMC with annual data collection at national and facility levels.
- Perform regular surveys on AMU in hospitals and ad hoc surveys on AMU in primary healthcare/community facilities, and report results to all relevant stakeholders.
- Monitor and report if national targets for AMC are met and adjust interventions accordingly.
- Conduct monitoring, documentation and reporting on antibiotic quality (e.g. substandard and falsified medicines).
- Capture data on illegal AMC (e.g. street markets, trafficking, internet sales).
- Participate in international initiatives to support capacity-building for optimizing AMU globally and share country experiences in the human health sector relevant international forums and platforms.

Participation and contribution of other sectors to actions:

1, 2, 3, 5, 6, 7

- Document and disseminate the results and lessons learned from efforts to minimize AMR events by relevant sectors (e.g. livestock, agriculture, food safety, etc.).
- Document permeability of AMU between sectors (e.g. human medicines given to animals).

**BENCHMARK 4.5: Optimize use of antimicrobial medicines in animal health and agriculture**

**OBJECTIVE: To ensure responsible and prudent use of all antimicrobials in animal food production, animal health and agriculture systems**

*Please note: for this benchmark, the actions are led by the country's animal health and agriculture sectors, and actions of all other sectors, including the human health sector, fall under other sectoral engagement.*

<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>02</b> LIMITED CAPACITY	IHR, Animal Health and Agriculture Sector Human Health and Other Sector Engagement

CAPACITY LEVEL	BENCHMARK ACTIONS
<b>01</b> NO CAPACITY	<ul style="list-style-type: none"> <li>● No or weak policy and regulations on responsible and prudent use, availability and quality of antimicrobials in the animal health sector and/or agriculture.</li> </ul>
<b>02</b> LIMITED CAPACITY	<ul style="list-style-type: none"> <li>● Involve public and private stakeholders from animal health and/or agriculture sector in activities of the dedicated national technical working group under the multisectoral AMR coordination committee.</li> <li>● Map and review existing legislation, regulations and policies for the management of antimicrobial medicines in relevant sectors (livestock, agriculture, food safety, etc.), particularly for nonveterinary medical purposes and use of medically important antimicrobials in food-producing animals.</li> </ul> <p>Participation and contribution of human health and other sectors to actions:</p> <p>1, 2</p> <ul style="list-style-type: none"> <li>● Share the most recent WHO list of medically important antimicrobials for human medicine with the animal health and agriculture sectors.</li> </ul>

## 03 DEVELOPED CAPACITY

- Develop regulations on prescription only sales of antimicrobials for use in animals and for food production, limiting non-prescription use of medically important antimicrobials.
- Develop capacity for enforcement of regulations.
- Develop training package on AMU in animal health and agriculture to promote responsible and prudent use at national, subnational and facility levels.
- Establish a training and certification mechanism for veterinarians prescribing antimicrobials for both terrestrial and aquatic animals.

Participation and contribution of human health and other sectors to actions:

1, 2

## 04 DEMONSTRATED CAPACITY

- Develop and disseminate information, education and communications materials to key stakeholders on AMR and misuse or abuse of antimicrobials across the animal health sector and/or agriculture sectors.
- Develop and enforce a full national regulatory framework for responsible and prudent use of affordable, quality assured antimicrobials in animals and agriculture.
- Recommend and implement the phasing out the use of antimicrobials for animal growth promotion.
- Monitor the sale and use of substandard and/or falsified antimicrobials, and develop corresponding enforcement mechanisms.

Participation and contribution of human health and other sectors to actions:

2, 4

- Collaboration between sectors on the development and dissemination of joint evidence-based information, education and communication materials on AMR and misuse or abuse of antimicrobials.

## 05 SUSTAINABLE CAPACITY

- Participate in international initiatives to build capacities for optimizing AMU globally.
- Document and disseminate the results and lessons learned from efforts to minimize AMR events in relevant sectors (e.g. livestock, agriculture, food safety, etc.)
- Develop and promote best practices for reducing AMU in the animal and plant farming and agriculture sectors.
- Conduct monitoring, documentation and reporting on antibiotic quality (e.g. substandard and falsified medicines).

- Conduct and collaborate operational research on the impact of responsible and prudent AMU in relevant sectors (i.e. animal health, human health, food security, agriculture and the environment).

Participation and contribution of human health and other sectors to actions:

- 1, 5
- Support the inclusion of relevant information and lessons learned in any annual reports developed by the national AMR coordination committee.

## Tools:

- The Pursuit of Responsible Use of Medicines: Sharing and Learning from Country Experiences. Geneva: World Health Organization; 2012 (<https://apps.who.int/iris/handle/10665/75828>).
- Guidelines for the prevention and control of carbapenem-resistant Enterobacteriaceae, Acinetobacter baumannii and Pseudomonas aeruginosa in health care facilities. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/259462>).
- Implementation manual to prevent and control the spread of carbapenem-resistant organisms at the national and health care facility level. Geneva: World Health Organization; 2019 (<https://www.who.int/publications/item/WHO-UHC-SDS-2019-6>).
- Handle antibiotics with care in surgery [infographic]. Geneva: World Health Organization ([https://www.who.int/images/default-source/lhs/ipc/infographic\\_ssi\\_tb.jpg?sfvrsn=7eee0a5\\_5](https://www.who.int/images/default-source/lhs/ipc/infographic_ssi_tb.jpg?sfvrsn=7eee0a5_5)).
- The role of infection prevention and control in preventing antibiotics resistance in health care [infographic]. World Health Organization ([https://cdn.who.int/media/docs/default-source/infection-prevention-control/09320f4b-309f-4999-8e23-23541eeb60a6.pdf?sfvrsn=1ea132d5\\_1](https://cdn.who.int/media/docs/default-source/infection-prevention-control/09320f4b-309f-4999-8e23-23541eeb60a6.pdf?sfvrsn=1ea132d5_1)).
- Antimicrobial Resistance: A manual for developing national action plans. Version 1. Geneva: Food and Agriculture Organization of the United Nations, World Organisation for Animal Health and World Health Organization; 2016 (<https://www.who.int/publications/i/item/antimicrobial-resistance-a-manual-for-developing-national-action-plans>).
- National antimicrobial resistance surveillance systems and participation in the Global Antimicrobial Resistance Surveillance System (GLASS): core components checklist and questionnaire. Geneva: World Health Organization; 2016 (<https://apps.who.int/iris/handle/10665/251552>).
- Diagnostic stewardship, A guide to implementation in antimicrobial resistance surveillance sites. Geneva: World Health Organization; 2016 (<https://www.who.int/publications/i/item/WHO-DGO-AMR-2016.3>).
- Guidelines on Core Components of Infection Prevention and Control Programmes at the National and Acute Health Care Facility Level. Geneva: World Health Organization; 2016 (<https://www.who.int/publications/i/item/9789241549929>).

- Interim Practical Manual: supporting national implementation of the WHO Guidelines on Core Competencies of Infection Prevention and Control Programmes. Geneva: World Health Organization; 2017 (<https://www.who.int/publications/i/item/WHO-HIS-SDS-2017-8>).
- WHO implementation handbook for national action plans on antimicrobial resistance: guidance for the human health sector. Geneva: World Health Organization; 2022 (<https://www.who.int/publications/i/item/9789240041981>).
- Global Database for Tracking Antimicrobial Resistance (AMR) Country Self-Assessment Survey (TrACSS) [database]. Food and Agriculture Organization of the United Nations, UN Environment Programme, World Health Organization and World Organisation for Animal Health ([www.amrcountryprogress.org](http://www.amrcountryprogress.org)).
- Monitoring and evaluation of the global action plan on antimicrobial resistance. Framework and recommended indicators. Geneva: Food and Agriculture Organization of the United Nations, World Organisation of Animal Health and World Health Organization; 2019 (<https://www.who.int/publications/i/item/monitoring-and-evaluation-of-the-global-action-plan-on-antimicrobial-resistance>).
- World Organisation for Animal Health. ANIMUSE Global Database on antimicrobial agents intended for use in animals [website]. Paris: World Organisation for Animal Health; 2023 (<https://amu.woah.org/amu-system-portal>).
- OIE Standards, Guidelines and Resolutions on Antimicrobial Resistance and the use of antimicrobial agents. Paris: World Organisation for Animal Health; 2020 (<https://www.woah.org/app/uploads/2021/03/book-amr-ang-fnl-lr.pdf>).
- OIE List of Antimicrobial Agents of Veterinary Importance. Paris: World Organisation for Animal Health; 2021 (<https://www.woah.org/app/uploads/2021/06/a-oie-list-antimicrobials-june2021.pdf>).
- Global action plan on antimicrobial resistance. Geneva: World Health Organization; 2016 (<https://www.who.int/publications/i/item/9789241509763>).
- U.S. National action plan for combating antibiotic-resistant bacteria [website]. Atlanta: Centers for Disease Control and Prevention; 2021 (<https://www.cdc.gov/drugresistance/us-activities/national-action-plan.html#:~:text=The%20U.S.%20National%20Action%20Plan,the%20health%20of%20all%20Americans>).
- Executive summary: The selection and use of essential medicines 2021: report of the 23rd WHO Expert Committee on the selection and use of essential medicines. Geneva: World Health Organization; 2021 (<https://www.who.int/publications/i/item/WHO-MHP-HPS-EML-2021.01>).
- National systems to support drinking-water, sanitation and hygiene: global status report 2019. UN-Water global analysis and assessment of sanitation and drinking-water (GLASS) 2019 report. Geneva: World Health Organization; 2019 (<https://www.unwater.org/publications/un-water-glaas-2019-national-systems-support-drinking-water-sanitation-and-hygiene>).
- WHO guidelines on use of medically important antimicrobials in food-producing animals. Geneva: World Health Organization; 2017 (<https://www.who.int/publications/i/item/9789241550130>).

- Integrated surveillance of antimicrobial resistance in foodborne bacteria: application of a one health approach: guidance from the WHO Advisory Group on Integrated Surveillance of Antimicrobial Resistance (AGISAR). Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/255747>).
- Critically important antimicrobials for human medicine: 6th revision 2018. Geneva: World Health Organization; 2019 (<https://www.who.int/publications/i/item/9789241515528>).
- GLASS Emerging antimicrobial resistance reporting framework (GLASS-EAR). Geneva: World Health Organization; 2018 (<https://www.who.int/publications/i/item/9789241514590>).
- GLASS guidance for national reference laboratories. Geneva: World Health Organization; 2020 (<https://www.who.int/publications/i/item/9789240010581>).
- Global Antimicrobial Resistance Surveillance System (GLASS) Molecular methods for antimicrobial resistance (AMR) diagnostics to enhance the global antimicrobial resistance surveillance system. Geneva: World Health Organization; 2019 (<https://www.who.int/publications/i/item/WHO-WSL-AMR-2019.1>).
- Global Antimicrobial Resistance and Use Surveillance System (GLASS) [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/initiatives/glass>).
- The International FAO Antimicrobial Resistance Monitoring (InFARM) System (under development) [website]. Rome: Food and Agriculture Organization of the United Nations; 2023 (<https://www.fao.org/antimicrobial-resistance/resources/database/infarm/en/>).
- Simulation exercises [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/emergencies/operations/simulation-exercises>).
- WHO simulation exercise manual: a practical guide and tool for planning, conducting and evaluating simulation exercises for outbreaks and public health emergency preparedness and response. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254741>).
- Guidance for after action review (AAR). Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/311537>).
- Guidance for conducting a country COVID-19 intra-action review. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/333419>).

# 05

## Zoonotic diseases

Functional multisectoral, multidisciplinary mechanisms, policies, systems and practices are in place to minimize the transmission and spread of zoonotic diseases between animals and humans.



### **IMPACT:**

Functional animal, environment and public health systems work individually and collaboratively through documented mechanisms and operational frameworks using a multisectoral One Health approach, and based on international standards, guidance and best practices to limit the risk of spill over and minimize transmission of endemic, emerging or re-emerging zoonotic diseases to human populations.



### **MONITORING AND EVALUATION:**

(1) Agreement between the animal and public health sectors on a prioritized list of zoonotic diseases and pathogens of greatest national public health concern. (2) Existence of functional capacities in animal health, public health and other relevant sectors with collaboration, coordination and communication between sectors for preparedness, detection, assessment, early warning and response to zoonotic diseases. (3) Improvement of sanitary animal production practices to reduce the risk of zoonotic disease transmission to human populations.



**BENCHMARK 5.1: A multisectoral surveillance system is in place for priority zoonotic diseases/pathogens**  
**OBJECTIVE: To strengthen multisectoral surveillance systems for priority zoonotic diseases/pathogens**

**CAPACITY LEVEL**

**BENCHMARK ACTIONS**

**01**  
**NO CAPACITY**

- No jointly agreed upon list of priority diseases to conduct coordinated multisectoral surveillance efforts.
- No organized coordinated surveillance system in place to connect animal and public health systems.

**02**  
**LIMITED CAPACITY**

- Identify key stakeholders and focal points from animal health (domestic animals and wildlife), human health, environmental health and other key sectors, and formalize a coordination mechanism (e.g. a multisectoral national surveillance team).
- Review and assess surveillance capacities for zoonotic diseases, as well as existing coordination or data sharing mechanisms between relevant sectors.
- Conduct an IHR–PVS national bridging workshop to improve collaboration between the human and animal health sectors for zoonotic disease surveillance.
- Conduct a joint process to define and prioritize zoonotic diseases of greatest national public health concern One Health approach involving all relevant stakeholders and develop operational plans and training packages for the management of priority diseases.
- Involve zoonotic disease experts in the development of NHPSPs to define the country's vision, policy and strategies to strengthen zoonotic disease management before, during and after health emergencies.
- Identify relevant medicines and medical products for preventing and treating priority zoonotic diseases that have a potential to cause an outbreak, and develop novel and innovative solutions.
- Identify a zoonotic disease focal point at the health ministry and collaborate with animal health departments and veterinary services to conduct joint action.
- Utilize the Tripartite Zoonosis Guide operational tools (OT), especially for joint risk assessment, assessment of surveillance capacity and coordination mechanisms.

Participation and contribution from other sectors in actions:

1, 2, 3, 4, 5, 6, 7, 8

- Identify a focal point or unit in animal health, veterinary services, wildlife and environmental sectors to collaborate with health ministry for joint action. . .



## 03 DEVELOPED CAPACITY

- Perform a WOAHP PVS evaluation (or other relevant tool of the PVS pathway), or review PVS evaluation findings and implementation status if one was conducted in the past two to three years.
- Develop a list of priority animal diseases (zoonotic and non-zoonotic animal diseases) in the animal health sector.
- Establish basic disease surveillance mechanisms for priority animal diseases and early warning mechanisms in the veterinary sector, and disseminate outputs to relevant health authorities.
- Develop and implement an operational plan to guide prevention and detection of priority zoonotic diseases of greatest national public health concern, and allocate associated resources at the national level.
- Establish mechanisms and procedures to exchange surveillance information on zoonotic diseases among relevant sectors (and other decision-makers, as needed), ideally through interoperable electronic systems and/or platforms.
- Train responsible staff at the national level on surveillance and management of priority zoonotic diseases.
- Conduct a joint risk assessment to identify high risk areas to develop risk-based surveillance where/when appropriate, and to inform risk management and communication for an effective coordinated preparedness and response to zoonotic diseases.
- Develop laboratory capacities within relevant sectors (human, animals incl. wildlife) to enable zoonotic disease detection and diagnosis.
- Develop and include modules on zoonotic disease management using a One Health approach in midlevel training programmes and public health education.
- Incorporate a module on zoonotic diseases and interactions at the human-animal-environment interface to undergraduate and postgraduate courses in relevant educational curricula, including for medical administrators.

Participation and contribution from other sectors in actions:

- 1, 2, 3, 4, 5, 6, 7
- Establish a mechanism for operational surveillance of priority animal diseases (including zoonotic diseases) across the country.
  - Plan and prioritize capacity-building activities on coordinated surveillance system for priority zoonotic diseases/pathogens, using results from the WOAHP PVS evaluation (or relevant tool of the PVS pathway) and the IHR-PVS national bridging workshops.
  - Identify and map high risk settings for zoonotic diseases with the potential to cause an epidemic.

## 04 DEMONSTRATED CAPACITY

- Implement operational plans for preventing and detecting priority zoonotic diseases of greatest national public health concern and allocate associated resources at the subnational level.
- Establish a surveillance mechanism for zoonotic diseases which includes specific components focusing on high risk areas and/or populations, sentinel surveillance, hotspot mapping and monitoring of drivers or other relevant risk factors.
- Establish continuing education and training programmes on zoonotic disease surveillance and management for staff across relevant sectors at subnational level.
- Regularly test surveillance system capacities with all relevant sectors to detect zoonotic events and the immediate containment/control and management of zoonotic diseases either by SimEx/AAR/IAR (as relevant).
- Collect and analyse relevant health data to manage zoonotic diseases across the country.
- Share surveillance data on zoonotic diseases with the animal health sector on a routine basis.

Participation and contribution from other sectors in actions:

1, 2, 3, 4, 5

- Implement capacity-building activities for coordinated surveillance systems on priority zoonotic diseases/pathogens using the results of the WOAHPVS evaluation (or relevant tool of the PVS pathway) and of the IHR-PVS national bridging workshops.
- Share animal health surveillance data on zoonotic diseases with human health sector on a routine basis and that joint risk assessments are conducted during zoonotic events.

## 05 SUSTAINABLE CAPACITY

- Revise and update the strategies, guidelines, operational plan and SOPs for coordinated surveillance of zoonotic diseases/pathogens based on lessons learned from SimEx/AAR/IAR (as relevant).
- Establish a follow up mechanism to implement recommendations from M&E activities.
- Allocate sustainable resources for coordinated surveillance and management of all priority zoonotic diseases across relevant sectors.
- Expand coordinated surveillance to all priority zoonotic diseases/pathogens, at all levels (national and subnational levels), including environmental media (i.e. water bodies, feeding sites) and establish system for reporting anomalous events such as unexpected mortality in key species of concern.

- Share country experience in coordinated surveillance of priority zoonotic diseases and engage the country in peer-to-peer learning programmes at the subnational level (i.e. between regions) or international level..

Participation and contribution from other sectors in actions:

1, 2, 3, 4, 5

- Revise and update strategies, guidelines, operational plans and SOPs for coordinated surveillance of zoonotic diseases/ pathogens based on lessons learned.

**BENCHMARK 5.2: A functional mechanism to respond to priority zoonotic diseases is in place**

**OBJECTIVE: To strengthen mechanism for responding to priority zoonotic diseases**

**CAPACITY LEVEL**

**BENCHMARK ACTIONS**

**01**  
**NO CAPACITY**

- No coordination between the animal health, public health and environment sectors is organized for zoonotic diseases.

**02**  
**LIMITED CAPACITY**

- Designate a focal point (with ToRs) from relevant sectors (animal (domestic animals and wildlife), human and environmental health, etc.) for coordinated response to priority zoonotic diseases.
- Clarify, document and formalize (with MoUs and/or ToRs) the roles and responsibilities of each sector when responding to a zoonotic disease outbreak.
- Review and assess existing policies, strategies, plans and/or mechanisms enabling multisectoral coordination for responding to priority zoonotic events, and ensure awareness of all relevant stakeholders.
- Develop guidelines and/or SOPs for coordinated investigation and response during zoonotic disease events.
- Map operational centres and experts available to respond to priority zoonotic disease events at the national and subnational levels.
- Develop and disseminate training packages on zoonotic event guidelines and SOPs.
- Develop a mechanism to rapidly alert relevant actors at the national and subnational levels, including communities during a priority zoonotic event.

Participation and contribution from other sectors in actions:

- 1, 2, 3, 4, 5, 6, 7
- Conduct a WOAHPVS evaluation (or other PVS pathway assessments) to identify gaps and capacity-building activities in the veterinary service sector for responding to priority zoonotic events. If a WOAHPVS evaluation was conducted within the past two to three years, review the results and their implementation status.

- Conduct an IHR-PVS national bridging workshop to improve collaboration between animal and human health sectors during response to zoonotic disease outbreaks.
- Establish emergency response mechanisms for the management of priority animal disease outbreaks (zoonotic and animal diseases), as well as for animal culling, cleaning and disinfection, carcass disposal, etc.

## 03 DEVELOPED CAPACITY

- Develop a multisectoral One Health operational plan with provision of resources in relevant sectors for coordinated responses to outbreak of the main priority zoonotic diseases.
- Develop a training programme for staff from the human, animal (domestic animals and wildlife) and environmental health sectors, including training on guidelines, SOPs and operational plans, at the national and subnational levels.
- Establish a mechanism for rapidly alerting relevant sectors in case of priority zoonotic outbreak events to reduce the time to initiate a coordinated outbreak response.
- Include access to laboratory capacity to identify pathogens of any priority zoonoses within response plans.
- Include modules on coordinated response to zoonotic diseases (including awareness on differences of perspectives and practices) in relevant medical curricula.
- Promote graduated training of personnel in the field of epidemiology of zoonotic diseases, such as a field epidemiology training program.

Participation and contribution from other sectors in actions:

1, 2, 3, 4, 5, 6

- Organize in-country discussions based on the results of the WOAHPVS evaluation (or other PVS pathway assessments) and the IHR-PVS national bridging workshops to plan and prioritize capacity-building activities.
- Support veterinary services' investments and budget as indicated in WOAHPVS assessment reports.

## 04 DEMONSTRATED CAPACITY

- Disseminate and expand the One Health operational plan to relevant sectors to respond to all priority zoonotic diseases across subnational levels.
- Regularly analyse and produce reports on the timeliness of information exchange and activation of response mechanisms between sectors.
- Regularly monitor and evaluate the efficiency of the multisectoral coordination mechanism for response through SimEx/AAR/IAR (as relevant) conducted at national and subnational levels.

- Graduate trained personnel from human and animal health in the field of epidemiology and demonstrate shared experience in responding to zoonotic disease epidemics.

Participation and contribution from other sectors in actions:

1, 2, 3, 4

- Use the results of the WOAHPVS evaluation (or other PVS pathway assessments) and the IHR-PVS national bridging workshops to implement capacity-building activities for functional mechanisms to respond to priority zoonotic diseases.
- Review and update the operational plan or mechanism based on the results of M&E and ensure follow up in implementation of recommendations.
- Document and disseminate the results and lessons learned from efforts to minimize zoonotic disease transmission from animals to humans.
- Share country experiences in zoonotic disease response and management and engage the country in peer-to-peer learning programmes at the subnational, national and international levels.

Participation and contribution from other sectors in actions:

1, 2, 3

- Review and update the operational plan or mechanism in the animal and environmental health sectors, based on the results of SimEx/AAR/IAR.

## 05 SUSTAINABLE CAPACITY

### **BENCHMARK 5.3: Safe practices in animal breeding and animal product systems limit the risk of zoonotic diseases**

**OBJECTIVE: To promote good sanitary practices in animal breeding and the production of animal products, to limit the risk of zoonotic disease transmission**

*Please note: for this benchmark, the actions are led by the country's animal health sector, and actions of other sectors, including the human health sector, fall under other sectoral engagement.*

CAPACITY LEVEL	BENCHMARK ACTIONS
<b>02</b> LIMITED CAPACITY	IHR, Animal Health and Agriculture Sector Human Health and Other Sector Engagement

#### **CAPACITY LEVEL**

**01**  
NO CAPACITY

- No systematic efforts to improve good sanitary practices in the breeding of terrestrial and aquatic animals and in the production of animal products<sup>36</sup> are actively promoted or are minimal.

**02**  
LIMITED  
CAPACITY

- Identify key stakeholders involved in the various value chains associated with a potential risk of zoonotic disease transmission through animal breeding, trade and/or production of animal products in relevant sectors.
- Establish a technical working group mandated to assess and map potential zoonotic disease transmission risks along various value chains, with representatives from relevant sectors, including animal health and production, wildlife, human health, agriculture, legislation, food and drug authority, police, animal welfare, etc.
- Review, compile and publicize sanitary standards, country laws and regulations for animal production practices, including breeding, animal product processes and trade, and animal welfare in compliance with WOAHI international standards.
- Assess the level of awareness on sanitary practices among stakeholders and professionals involved in animal breeding and production of animal products for limiting risk of zoonotic diseases, including knowledge of laws and/or policies regulating activities (including those related to animal welfare).

<sup>36</sup> This refers to all sorts of products from breeder animals.

- Identify and document gaps/common issues in compliance and adherence to sanitary practices in animal breeding to reduce the risk of exposure to zoonotic pathogens during selling, slaughtering, culling or other practices potentially at risk.
- Explore if zoonotic disease risk assessments include the entire value chain from animal breeding practices to animal product, including export and import of livestock, animal feeders, animals, animal products, etc.
- Prioritize actions to promote sanitary standards in animal breeding and production practices under the leadership of veterinary services and in collaboration with private sector stakeholders involved in the various value chains, as well as with human health services, environment authorities, food and drug authorities, legislature, police and relevant sectors.

Participation and contribution from human health other sectors in actions:

1, 2, 3, 4, 5, 6

## 03 DEVELOPED CAPACITY

- Develop and implement management plans to reduce the risk of zoonotic diseases associated with animal breeding and production of animal products.
- Develop a mechanism to promote sanitary practices along the various value chains (from animal breeding to the final animal product) that highlights potential sanitary risks and possible measures to reduce them.
- Develop a database of trained professionals from relevant sectors (e.g. food and agriculture, animal health, environment, human health, etc.) capable to assess the risk of zoonotic diseases associated with animal breeding and the production of animal products.
- Develop and update laws and regulations as needed, to ensure compliance with sanitary standards for animal production and importation and exportation of animals and animal products as recommended by WOAHA.
- Develop and disseminate a training package for professionals and the public on sanitary animal production practices, including reducing the risk of exposure to zoonotic pathogens during selling, slaughtering, culling or other practices.
- Regularly conduct national level training of trainers sessions for facilitated dissemination of good practices to reduce the risk of zoonotic diseases associated with animal breeding and animal product processing practices.
- Identify and assess the risks associated with animal production practices, and identify communities or professionals who are exposed to identified risks.

Participation and contribution from human health and other sectors in actions:

1, 2, 3, 4, 5, 6, 7



## 04 DEMONSTRATED CAPACITY

- Establish continuous and functional processes to identify risks of zoonotic disease transmission associated with animal breeding and animal products processing, with multisectoral involvement.
- Assess adherence to sanitary standards along value chains identified with possible risks of transmission of zoonotic diseases.
- Regularly conduct initial or refresher training at national and subnational levels to increase potentially exposed workers' awareness of zoonotic disease risks associated with animal breeding and animal product processing practices.
- Improve awareness among the public on the importance of implementing sanitary standards along the various value chains, from animal breeding sites to animal product, in order to prevent zoonotic disease transmission from animals to humans.

Participation and contribution from human health and other sectors in actions:

1, 2, 3, 4

## 05 SUSTAINABLE CAPACITY

- Sustained collaboration and linkages across relevant sectors for promoting and implementing safe animal production practices in animal breeding and animal products value chains.
- Conduct periodic inspection, assessment and monitoring of practices in animal breeding and the production of animal products in main animal production value chains, and routinely verify compliance with national guidance.
- Conduct a joint review, regularly with relevant sectors, to assess the functionality of mechanisms for safe animal production practices and document best practices and lessons learned.
- Update legislation, regulations and guidelines based on lessons learned from joint reviews of safe animal production practices and the risk of zoonotic disease transmission.
- Share country experiences in promoting and implementing safe animal production practices to reduce zoonotic disease transmission and engage the country in peer-to-peer learning programmes at the subnational, national and international levels.

Participation and contribution from human health and other sectors in actions:

1, 2, 3, 4, 5

## Tools:

- Strengthening the IHR through a One Health approach. Geneva: World Health Organization; 2023 (<https://www.who.int/activities/strengthening-global-health-security-at-the-human-animal-interface/strengthening-the-IHR-through-a-one-health-approach>).
- World Health Organization & World Organisation for Animal Health. Handbook for the assessment of capacities at the human-animal interface, 2nd edition. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254552>).
- Operational framework for good governance at the human-animal interface. World Health Organization and World Organisation for Animal Health; 2014 (<https://www.who.int/publications/item/who-oie-operational-framework-for-good-governance-at-the-human-animal-interface>).
- Berthe FCJ, Bouley T, Karesh WB, Legall IC, Machalaba CC, Plante CA, et al. One Health: Operational framework for strengthening human, animal, and environmental public health systems at their interface. Washington DC: World Bank Group; 2018 (<http://documents.worldbank.org/curated/en/96110152465708673/One-health-operational-framework-for-strengthening-human-animal-and-environmental-public-health-systems-at-their-interface>).
- Joint Food and Agriculture Organization of the United Nations-World Health Organisation for Animal Health-World Health Organization. Global early warning system for health threats and emerging risks at the human-animal-ecosystems interface (GLEWS) [website]. Food and Agriculture Organization of the United Nations, World Organisation for Animal Health and World Health Organization (<http://www.glews.net/>).
- Strengthening global health security and the human-animal interface. Geneva: World Health Organization; 2023 (<https://www.who.int/activities/strengthening-global-health-security-at-the-human-animal-interface>).
- The control of neglected zoonotic diseases: from advocacy to action: report of the fourth international meeting held at WHO Headquarters, Geneva, Switzerland, 19-20 November 2014. Geneva: World Health Organization; 2024 (<https://apps.who.int/iris/handle/10665/183458>).
- WHO Regional Office for South-East Asia, WHO Regional Office for the Western Pacific, Food and Agriculture Organization of the United Nations and World Organisation for Animal Health. Zoonotic diseases: a guide to establishing collaboration between animal and human health sectors at the country level. Manila: WHO Regional Office for the Western Pacific; 2009 (<https://apps.who.int/iris/handle/10665/206190>).
- One health [website]. Geneva: World Health Organization; 2023 ([https://www.who.int/health-topics/one-health#tab=tab\\_1](https://www.who.int/health-topics/one-health#tab=tab_1)).
- PVS Pathway [website]. Paris: World Organisation for Animal Health; 2023 (<https://www.woah.org/en/what-we-offer/improving-veterinary-services/pvs-pathway>).
- One Health Zoonotic Disease Prioritization (OHZDP) [website]. Atlanta: Centers for Disease Control and Prevention; 2022 (<https://www.cdc.gov/onehealth/what-we-do/zoonotic-disease-prioritization/index.html>).

- Taking a Multisectoral, One Health Approach: A Tripartite Guide to Addressing Zoonotic Diseases in Countries. Geneva: Food and Agriculture Organization of the United Nations, World Health Organisation for Animal Health, and World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/325620>).
- Performance of Veterinary Services (PVS) Pathway. Paris: World Health Organisation for Animal Health; 2023 (<https://irr-europe.woah.org/en/our-missions/veterinary-services/pvs-pathway/>).
- IHR-PVS National Bridging Workshops [database]. Geneva: World Health Organization; 2023 (<https://extranet.who.int/sph/ihr-pvs-bridging-workshop>).
- Strengthening Veterinary Diagnostic Capacities: the FAO Laboratory Mapping Tool. Rome: Food and Agriculture Organization of the United Nations; 2016 (<https://www.fao.org/documents/card/es/c/e13cf0b7-c8f4-4ff7-b340-439f40c677ec/>).
- FAO Assessment Tool for Laboratories and AMR Surveillance Systems (FAO-ATLASS) [website]. Rome: Food and Agriculture Organization of the United Nations; 2020 (<https://www.fao.org/antimicrobial-resistance/resources/tools/fao-atlass/en/>).
- Terrestrial Animal Health Code. Paris: World Organisation for Animal Health; 2022 ([https://www.woah.org/en/what-we-do/standards/codes-and-manuals/terrestrial-code-online-access/?id=169&L=1&htmlfile=chapitre\\_vet\\_legislation.htm](https://www.woah.org/en/what-we-do/standards/codes-and-manuals/terrestrial-code-online-access/?id=169&L=1&htmlfile=chapitre_vet_legislation.htm)).
- Food and Agriculture Organization of the United Nations, World Health Organisation for Animal Health & World Health Organization Tripartite Joint Risk Assessment Operational Tool (JRA OT). Geneva: Food and Agriculture Organization of the United Nations, World Organisation for Animal Health and World Health Organization; 2020 (<https://www.who.int/initiatives/tripartite-zoonosis-guide/joint-risk-assessment-operational-tool>).
- Simulation exercises [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/emergencies/operations/simulation-exercises>).
- WHO simulation exercise manual: a practical guide and tool for planning, conducting and evaluating simulation exercises for outbreaks and public health emergency preparedness and response. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254741>).
- Guidance for after action review (AAR). Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/311537>).
- Guidance for conducting a country COVID-19 intra-action review. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/333419>).

# 06

## Food safety

A functional system is in place for surveillance and response capacity of States Parties for foodborne disease and food contamination risks, or food safety events, with effective communication and collaboration among sectors responsible for food safety.



### IMPACT:

Timely detection and effective response to mitigate food safety emergencies, in collaboration with relevant sectors responsible for food safety.



### MONITORING AND EVALUATION:

(1) Existence of indicator-based disease surveillance (IBS) or event-based disease surveillance (EBS) and supporting laboratory analysis to detect and assign an aetiology for foodborne diseases or origin of contamination event and investigate hazards in foods linked to cases, outbreaks or events. (2) Existence of a national food safety emergency plan. (3) Existence of a designated International Food Safety Authorities Network (INFOSAN) emergency contact point and a WOAAH focal point on animal production food safety with a central coordination mechanism in place.

## BENCHMARK 6.1: Surveillance systems are in place for the detection and monitoring of foodborne diseases and food contamination

OBJECTIVE: To strengthen surveillance systems for foodborne diseases and food contamination

### CAPACITY LEVEL

### BENCHMARK ACTIONS

# 01

NO CAPACITY

- No or very limited surveillance system in place for foodborne disease or for food contamination (chemical and microbiological) monitoring.

# 02

LIMITED CAPACITY

- Review foodborne disease surveillance and food contamination monitoring capacity to assess gaps and needs, and examine diseases and syndromes already under surveillance in the country that may indicate foodborne diseases.
- Develop guidelines and SOPs for the detection of foodborne events through indicator-/event-based disease surveillance<sup>37</sup>.
- Establish indicator-based disease surveillance for notifiable syndromes and diseases such as diarrhoea (i.e. develop a database to store data, alert thresholds, regular analysis of notifiable diseases, cause analysis of undetectable outbreaks, documentation and protocol/SOPs).
- Establish event-based disease surveillance (i.e. identify national focal point, specify if the event being reported is suspected as foodborne, train health workers to recognize and report foodborne events).
- Adapt the rapid risk assessment (RRA) process to accommodate foodborne diseases and conduct at the national level<sup>38</sup>.
- Identify a mechanism or multisector team with relevant agencies to coordinate the development and implementation of foodborne disease surveillance, food contamination monitoring system(s), data sharing and staff that can contribute to RRAs.
- Identify high risk settings such as farms, industries, points of entry, markets, mass gathering events, etc. that require specific attention and focus on food safety control and consumer safety and protection.
- Review the legal framework for surveillance and monitoring of foodborne diseases and food contamination to ensure alignment between the human and animal health sectors, food business operators and food safety legislation.

<sup>37</sup> Refer to stage 1 strengthening surveillance of and response to foodborne diseases in Using indicator- and event-based surveillance to detect foodborne events <https://apps.who.int/iris/bitstream/handle/10665/259471/9789241513241-eng.pdf>

<sup>38</sup> Refer to stage 1 rapid risk assessment of foodborne events in Using indicator- and event-based surveillance to detect foodborne events <https://apps.who.int/iris/bitstream/handle/10665/259471/9789241513241-eng.pdf>

## 03 DEVELOPED CAPACITY

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8

- Train food/sanitary inspectors to report events<sup>39</sup>.
- Train animal health inspectors to report the occurrence of zoonotic diseases that could be foodborne.
- Continue to implement actions (as suggested above) for both indicator- and event-based disease surveillance systems at national and subnational levels where possible (subnational)<sup>40</sup>.
- Establish laboratory-based surveillance (i.e. select priority foodborne pathogens, sampling protocols, detection methodologies, database for laboratory-based surveillance data and data reporting protocols).
- Develop a strategy to monitor trends and detect foodborne events, and incorporate strategy into the national communicable disease surveillance strategy.
- Train laboratory and health workers on obligations to report notifiable diseases, including those with non-diarrhoeal symptoms.
- Expand the existing notifiable disease surveillance database to receive notifications about individual cases from health workers and laboratories.
- Provide resources for the investigation of foodborne disease or food contamination events at the national level. This should include investigations into hazards in foods linked to cases, outbreaks or events.
- Designate one/multiple national reference centre(s) with appropriate geographical coverage across the country to support the surveillance and response system.
- Develop an IT system for recording, analyzing and sharing data collected during detection and monitoring of foodborne diseases and food contamination at the national and subnational levels.
- Organize informational and educational campaigns to raise awareness in communities and sensitize partners and journalists on the management of foodborne diseases and food contamination in the country, through relevant sectors/partners.
- Develop an operational communication mechanism including relevant stakeholders for food safety in the country.

Participation and contribution of other sectors to actions:

1, 2, 3, 6, 7, 8, 9, 10

<sup>39</sup> An event is defined as a manifestation of disease or an occurrence that creates a potential for disease.

<sup>40</sup> Refer to stage 2 strengthening surveillance of and response to foodborne diseases in Strengthening indicator-based surveillance <https://apps.who.int/iris/bitstream/handle/10665/259472/9789241513258-eng.pdf>.



## 04 DEMONSTRATED CAPACITY

- Develop an integrated food chain surveillance system that allows integration of information from foodborne diseases and food contamination surveillance systems into health information systems.
- Designate and train staff to conduct RRA for foodborne diseases at the national and subnational levels with use of in-country laboratory data. Food safety and laboratory staff should be standing members of RRA teams when an event is suspected to be foodborne<sup>41</sup>.
- Increase use of in-country laboratory surveillance data to inform assessments and increase confidence in the overall risk assessment through data that is more extensive, reliable, complete and high quality.
- Conduct joint risk assessments of acute foodborne events (chemical and microbiological), publish periodic reports (e.g. an epidemiological bulletin) and identify appropriate risk management strategies through multisectoral involvement.
- Contribute to International Food Safety Authorities Network (INFOSAN) activities to share information internationally<sup>42</sup>.
- Share molecular patterns of relevant pathogens in an international database to support detection of foodborne outbreaks.
- Conduct SimEx/AAR/IAR (as relevant) to test the functionality of capacities for detection and monitoring of foodborne diseases and food contamination.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7

## 05 SUSTAINABLE CAPACITY

- Analyse the integrated food chain surveillance system for food regulators conducting risk analysis in accordance with Codex Alimentarius Commission guidelines.
- Maintain the level of function and expand the list of pathogens under integrated food chain surveillance, and periodically update the priority list of foodborne diseases or syndromes for regulated procedures of surveillance and reporting.
- Regularly update stakeholder ToRs, strategies, SOPs and training packages for detection and monitoring of foodborne diseases and food contamination based on lessons learned and ensure that recommendations from M&E activities are implemented.
- Facilitate a governance structure that allows data to be shared and includes a coordination and communication mechanism.

<sup>41</sup> Refer to stage 2 rapid risk assessment of foodborne events in *Strengthening indicator-based surveillance* <https://apps.who.int/iris/bitstream/handle/10665/259472/9789241513258-eng.pdf>.

<sup>42</sup> FAO/WHO International Food Safety Authorities Network <https://www.who.int/groups/international-food-safety-authorities-network-infosan>

<sup>43</sup> Codex Alimentarius Commission guidelines <https://www.fao.org/fao-who-codexalimentarius/codex-texts/guidelines/en/>

## 05 SUSTAINABLE CAPACITY

- Regularly document and share country experiences across relevant sectors in surveillance and detection of foodborne diseases, food contamination, food fraud and non-compliance issues, and participate in international initiatives to strengthen capacities globally.
- Identify gaps in knowledge and conduct relevant research studies to supplement surveillance and monitoring data.
- Apply whole genome sequencing techniques to foodborne disease surveillance and food monitoring.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7



## BENCHMARK 6.2: A functional mechanism is in place for the response and management of food safety emergencies

### OBJECTIVE: To strengthen mechanisms for response and management of food safety emergencies

#### CAPACITY LEVEL BENCHMARK ACTIONS

# 01

## NO CAPACITY

- No mechanism for the response and management of food safety emergencies has been established or is in place, or is very limited.

# 02

## LIMITED CAPACITY

- Review the legal framework for the response and management of food safety emergencies at the national and subnational levels.
- Identify and map key government agencies and cross-sector partners for roles and responsibilities in response and management of food safety emergencies and contribution to RRAAs.
- Develop a response plan, SOPs and guidelines for national food safety emergencies.
- Develop capacity to gather epidemiological and laboratory evidence during a response (i.e. train outbreak response teams to conduct investigation, collect information to identify source of outbreak, conduct event database analysis, develop a list of priority foodborne hazards and identify testing laboratories).
- Identify relevant medicines and medical products for preventing and treating priority foodborne diseases and food contamination events that could potentially cause an outbreak.
- Regularly share data on food safety emergency management with national health authorities and include in the national health database.
- Involve foodborne diseases experts in developing NHPSPs to define the country's vision, policy directions and strategies for ensuring strengthening of capacity to manage foodborne diseases before, during and after emergencies.

#### INFOSAN:

- Designate an INFOSAN emergency point of contact in the government agency responsible for the response and management of food safety emergencies and establish a communication system with the IHR NFP during food safety emergencies. The parties are encouraged to refer to the IHR/INFOSAN communication template<sup>44</sup>.

<sup>44</sup> Template for INFOSAN/IHR communication. <https://www.who.int/publications/item/9789240012288>

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8

- Identify and map high risk settings for food safety emergencies.
- Develop and share advocacy materials (by relevant sectors) to engage experts and raise community awareness about mechanisms to respond to priority zoonotic diseases, foodborne diseases and food contamination events.
- Update the response plan, SOPs and guidance to include findings from analytical epidemiological studies conducted during food safety emergencies at both national and subnational levels.
- Draft new legislation or amend existing legislation to strengthen the legal basis for the response and management of food safety emergencies at the national and subnational levels.
- Disseminate SOPs and guidelines for the response and management of food safety emergencies across stakeholder networks.
- Develop strategies and guidance for orienting and communicating with partners, stakeholders, the general public, international organizations and applicable regional and international networks on food safety guidelines<sup>45</sup>.
- Develop and disseminate risk communication messages to the public, through appropriate media, during food safety emergencies<sup>46</sup>.
- Develop a food recall system (SOP) involving all relevant stakeholders (including the private sector) and include procedures and regulations establishing traceability and recall systems and routine inspections that take place after a recall.
- Put in place specific questionnaires to be used to obtain a food history from cases during an outbreak to identify outbreak sources, with questionnaires covering priority foodborne pathogens.
- Include new modules (based on change/adaptation needs assessment) in the training curricula for relevant health workers that cover the management of priority/novel foodborne emergencies. Define certifications and remuneration for trained health workers as required.

## 03 DEVELOPED CAPACITY

<sup>45</sup> Refer to *Assuring food safety and quality: guidelines for strengthening national food control systems*. Food and Agriculture Organization of the United Nations. 2003. <https://www.fao.org/3/y8705e/y8705e.pdf>

<sup>46</sup> Refer to *Risk communication applied to food safety handbook*. Food and Agriculture Organization of the United Nations and World Health Organization. 2016. <https://www.fao.org/publications/card/en/c/15863E>

## INFOSAN

- Designate INFOSAN focal points with responsibility for food safety at appropriate levels in government agencies to form a multisectoral working group for coordination, response and communication with IHR NFP (ensure there is at least one focal point designated from public health, food inspection, veterinary, official laboratory, customs and quarantine and agriculture sectors).

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8, 9

## 04 DEMONSTRATED CAPACITY

- Report regularly to the national public health authorities all relevant information and updates on the management of foodborne incidents and emergencies in the country (and outside the country).
- Collect and collate routine health data, and regularly analyse data on management of foodborne diseases across the country.
- Conduct SimEx/AAR (as relevant) for foodborne events to test the capacity of surveillance and monitoring systems and include relevant sectors (animal health, environment, food business operators, etc).

## INFOSAN:

- Establish a mechanism for regular information sharing between the INFOSAN emergency contact point, the INFOSAN Secretariat, the IHR NFP, INFOSAN focal points and relevant sectors during a food safety emergency on the national and international level.
- Test information sharing mechanisms at the international and global regional levels by performing SimEx/AAR (as relevant) on a regular basis.
- Participate, all relevant parties (i.e. INFOSAN emergency contact point, INFOSAN focal points and the IHR NFP), in national workshops organized by the INFOSAN Secretariat to establish a roadmap to strengthen communication between involved parties and with the INFOSAN Secretariat.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6

- Organize and support cross-sectoral risk communication and community engagement (RCCE) initiatives to strengthen the participation and commitment of the community, food chain actors from public and private sectors (including the informal economy), and strategic and technical partners in the response and management of food safety emergencies at the national and subnational levels.

## 05 SUSTAINABLE CAPACITY

- Document and disseminate lessons and best practices for timeliness, information exchange, public health risk messaging, efficiency and effectiveness of response, collaboration and communication for food safety events.
- Review and update management and response plans and relevant legislation based on findings from SimEx/AAR (as relevant).
- Continuously monitor medicines and medical products for preventing and treating priority foodborne diseases to track adverse reactions, side effects and benefits over time.
- Share country experience in response and management of food safety emergencies and participate in international initiatives to strengthen capacities globally.

### INFOSAN:

- Conduct an audit on membership and update the designation of INFOSAN emergency contact points and focal points as needed.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5

### Tools:

- Food Control System Assessment Tool: Introductory booklet. Geneva: Food and Agriculture Organization of the United Nations and World Health Organization; 2021 (<https://www.who.int/publications/i/item/9789240028371>).
- Food safety [website]. Geneva: World Health Organization; 2023 ([https://www.who.int/health-topics/food-safety#tab=tab\\_1](https://www.who.int/health-topics/food-safety#tab=tab_1)).
- Using indicator- and event-based surveillance to detect foodborne events. Stage One Booklet: Strengthening surveillance of and response to foodborne diseases. Geneva: World Health Organization; 2017 (<https://www.who.int/publications/i/item/strengthening-surveillance-of-and-response-to-foodborne-diseases>).
- Strengthening indicator-based surveillance. Stage Two Booklet: Strengthening surveillance of an response to foodborne diseases. Geneva: World Health Organization; 2017 (<https://www.who.int/publications/i/item/9789241513258>).
- Integrated surveillance of antimicrobial resistance in foodborne bacteria: application of a one health approach: guidance from the WHO Advisory Group on Integrated Surveillance of Antimicrobial Resistance (AGISAR). Geneva: World Health Organization; 2027 (<https://apps.who.int/iris/handle/10665/255747>).

- Whole genome sequencing for foodborne disease surveillance: landscape paper. Geneva: World Health Organization; 2018 (<https://apps.who.int/iris/handle/10665/272430>).
- INFOSAN members' guide. Web Annex. Template for INFOSAN/IHR communication: national protocol for information sharing with national and international partners during food safety events and outbreaks of foodborne illness. Geneva: World Health Organization and Food and Agriculture Organization of the United Nations; 2020 (<https://www.who.int/publications/i/item/9789240012288>).
- Estimating the burden of foodborne diseases: a practical handbook for countries: a guide for planning, implementing and reporting country-level burden of foodborne disease. Geneva: World Health Organization; 2021 (<https://apps.who.int/iris/handle/10665/341634>).
- Codes and manuals [website]. Paris: World Organisation for Animal Health; 2023 (<https://www.woah.org/en/what-we-do/standards/codes-and-manuals/>).
- FAO/WHO International Food Safety Authorities Network (INFOSAN). Food and Agriculture Organization of the United Nations and World Health Organization; 2023 (<https://www.who.int/groups/international-food-safety-authorities-network-infosan>).
- Assuring food safety and quality: Guidelines for strengthening national food control systems. Food and Agriculture Organization of the United Nations and World Health Organization; 2003 (<https://www.fao.org/publications/card/en/c/92f82d38-5557-4ca1-b361-be14cd129db6/>).
- Risk communication applied to food safety handbook. Rome: Food and Agriculture Organization of the United Nations and World Health Organization; 2016 (<https://www.fao.org/publications/card/en/c/158563E/>).
- Codex Alimentarius International Food Standards – Guidelines. Food and Agriculture Organization of the United Nations and World Health Organization; 2023 (<https://www.fao.org/fao-who-codexalimentarius/codex-texts/guidelines/en/>).
- Simulation exercises [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/emergencies/operations/simulation-exercises>).
- WHO simulation exercise manual: a practical guide and tool for planning, conducting and evaluating simulation exercises for outbreaks and public health emergency preparedness and response. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254741>).
- Guidance for after action review (AAR). Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/311537>).
- Guidance for conducting a country COVID-19 intra-action review. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/333419>).

# 07

## Immunization

Immunization is key to the prevention and control of epidemic-prone vaccine-preventable diseases (VPDs). A national vaccine delivery system should be in place, with nationwide reach, effective distribution, easy access for marginalized populations, adequate cold chain and ongoing quality control, to respond to existing and new disease threats.



### IMPACT:

Effective protection through achievement and maintenance of immunization against measles and other epidemic-prone VPDs. Measles immunization is identified as a proxy indicator for overall immunization against VPDs as measles is a continuing cause of substantial avoidable morbidity and mortality. Identification and implementation of targeted immunization activities to protect populations at risk of other epidemic-prone VPDs of national importance (e.g. cholera, Japanese encephalitis, meningococcal disease, typhoid, yellow fever and COVID-19, etc.). Diseases that are transferable from animals to humans, such as anthrax and rabies, are also included.



### MONITORING AND EVALUATION:

90–95% coverage of the country's 12 month old population with measles-containing-vaccine first-dose (MCV1), as demonstrated by coverage surveys.

<b>BENCHMARK 7.1: Optimum vaccine coverage (measles) as part of a national programme</b> <b>OBJECTIVE: To increase vaccine coverage for priority vaccine-preventable diseases (VPDs) in the country</b>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● Less than 50% of the country's 12 month old population has received measles-containing-vaccine first-dose (MCV1), as demonstrated by coverage surveys or administrative data.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Assess and map existing coverage data to identify high risk areas and populations to target control of selected VPDs.</li> <li>● Conduct stakeholder mapping and form a multistakeholder national advisory committee which will guide country policies and strategies for optimum vaccine coverage based on country risk profile for measles and other VPDs.</li> <li>● Develop an immunization strategy with a comprehensive multiyear operational plan outlining and describing actions and activities for increasing vaccine coverage at national and subnational levels.</li> <li>● Evaluate immunization surveillance data, registries, data and reporting systems to identify areas for strengthening of immunization data management.</li> <li>● Develop and disseminate guidance and tools to increase routine immunization services, with a focus on MCV1 coverage and conduct activities to achieve 50–69% MCV1 coverage in the country's 12 month old population.</li> <li>● Develop plans to perform catch-up campaigns or supplemental immunization activities, based on epidemiologic and coverage data.</li> <li>● Develop a standardized system of monitoring and reporting adverse events following immunization (AEFI).</li> </ul> <p>Participation and contribution of other sectors to actions: 1, 2, 3, 5, 6</p>
<b>03</b> <b>DEVELOPED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Use mapping and assessment data to plan targeted routine and supplemental immunization activities in high risk areas and populations.</li> <li>● Finalize, approve and operationalize the national immunization plan with activities to achieve 70–89% MCV1 coverage in the country's 12 month old population and introduce immunization into targeted populations.</li> </ul>



- Develop guidelines, SOPs, training materials and toolkits on pre- and post-service guidance for immunization, safety, waste management and reporting and train health workers.
- Create and disseminate messaging tools to improve knowledge-based capacities (i.e. communication and education) of health workers conducting community mobilization.
- Operationalize a national vaccine registry and standardized system of monitoring and reporting AEFI at all health facilities and train health workers on these.
- Develop specific plans to ensure continuity of routine immunization activity, prevent interruption of services during health emergencies and catch-up vaccination plans when interruptions have occurred.

Participation and contribution of other sectors to actions:

2, 3, 6

- Develop materials and activities to advocate for the importance of vaccination by ministries of education, labour, social security, culture, etc. for relevant populations (children, workers, etc.).

## 04 DEMONSTRATED CAPACITY

- Conduct activities to achieve 90% MCV1 coverage in the country's 12 month old population, implementing specific strategies focused on reaching vulnerable and marginalized populations at the national and subnational levels to reduce inequities with the target of progressing to 95% national coverage in 2030.
- Develop and implement quality assurance standards and M&E mechanisms for immunization including data quality reviews, and ensure sufficient health workers are appropriately trained.
- Promote immunizations and sensitize communities through routine messaging through traditional and social media and engaging CSOs and religious leaders.
- Evaluate and validate the AEFI reporting system.
- Develop a legal basis and strategy for closer collaboration between public and private institutions involved in implementing the immunization strategy at the national and subnational levels.
- Organize SimEx/AAR/IAR (as relevant) to test the organization of immunization campaigns at national and subnational levels and confirm they are functional as routine systems and during special circumstances such as a health emergency.
- Develop a system to track individual immunization status for priority VPDs while protecting privacy by leveraging immunization registries, electronic databases and national identification number systems.



- Work with relevant ministries to secure sustainable domestic funding (e.g. >12month funded operational plans) for immunization activities.
- Recruit additional voices for immunization advocacy campaigns in the community (e.g. social, religious and traditional leaders) and train them as champions to deliver messages on the importance of immunization for priority VPDs.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8, 9

## 05 SUSTAINABLE CAPACITY

- Integrate the national vaccine registry with national health information systems, as appropriate.
- Conduct activities to ensure 95% of the country's 12 month old population have received at least one dose of MCV.
- Conduct formal surveys of underserved areas to ensure that coverage among vulnerable and marginalized populations is >90%.
- Use results from SimEx/IAR/AAR (as relevant) to update and improve the national immunization strategy.
- Share country experiences in the management of vaccination campaigns for priority VPDs and engagement with marginalized and vulnerable groups, and engage the country in peer-to-peer learning programmes at the subnational, national and international levels.
- Develop programmes or incentives to encourage and support routine vaccination while respecting the autonomy of beneficiaries.
- Develop educational programmes to promote the importance of vaccination and combat misinformation and disinformation about vaccines.
- Develop innovative tools to support information and education campaigns on immunization including development of new platforms, social media tools, and mobile and internet-based technologies based on lessons learned from previous campaigns, communications and social marketing efforts.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8

<b>BENCHMARK 7.2: Provision of national vaccine access and delivery</b> <b>OBJECTIVE: To strengthen capacity for vaccine access and delivery to target populations</b>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● No plan is in place for nationwide vaccine delivery, nor have plans been drafted to provide vaccines throughout the country to target populations or inadequate vaccine procurement and forecasting has led to regular stockouts at the central or district levels.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Draft or review existing plans, policies and procedures for vaccine delivery and use results to guide vaccine procurement and delivery of targeted vaccines.</li> <li>● Draft a list of essential vaccines for the country based on international recommendations and country risk profile.</li> <li>● Review national laws and regulations for procuring vaccines from national and international sources during health emergencies.</li> <li>● Form a national multisectoral working group to coordinate vaccine procurement and delivery and developed national guidance documents for vaccine stockpile and deployment and obtain approval from health ministry (and agriculture ministry where applicable).</li> <li>● Establish a cold chain for vaccine delivery to at least 40% of districts or 40% of the target population in the country.</li> <li>● Complete a review to identify barriers to procuring, receiving, storing and deploying vaccines and develop a national guideline for vaccine supply chain management, quality assurance and secured delivery to target populations at both national and subnational levels before, during and after health emergencies.</li> </ul>
<b>03</b> <b>DEVELOPED CAPACITY</b>	<p>Participation and contribution of other sectors to actions: 1, 3, 4, 5, 6</p> <ul style="list-style-type: none"> <li>● Conduct a detailed assessment of existing cold chain equipment, including functioning, and identify bottlenecks to maintaining needed cold chain infrastructure at the district, state and provincial levels and use assessment data to operationalize a plan to service and procure cold chain infrastructure as needed.</li> <li>● Operationalize national guidelines for vaccine delivery to target populations and develop and disseminate protocols, SOPs, trainings, technical guidelines and toolkits for storage, transportation and deployment of vaccines to health workers and staff.</li> </ul>

- Establish a cold chain for vaccine delivery to at least 40–59% of districts or 40–59% of the target population in the country.
- Establish guidance to prevent interruption of routine vaccination during health emergencies (with clear designation of funding sources, minimum staff and cold chain capacity to ensure continuity of immunization services), specifying procedures for procurement, efficient customs clearance, storage and transportation of vaccines.
- Form a strategic national vaccine stockpile based on the list of essential vaccines identified for the country, with security and quality requirements met for sufficient vaccine access and delivery to target populations.
- Regularly invite national vaccine manufacturers to the national working group for coordination of vaccine access and delivery, to facilitate dialogue and negotiation and to ensure affordability of vaccines before, during and after emergencies to avoid speculation.
- Work with relevant partners to secure resources and investments in immunization.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7

- Develop capacities for international and national transport of vaccines and vaccination material involving public and private transport companies within and outside the country.
- Develop specific capacities in relevant sectors to manage vaccine logistics for specific vaccines including cooling warehouses, cooling boxes, specific interim storage conditions, delivery and downstream distribution, etc.
- Procure and service cold chain equipment in areas identified by the detailed assessment to ensure vaccine delivery to at least 60–79% of districts or 60–79% of the target population in the country.
- Routinely train health workers and other immunization staff on protocols, SOPs, technical guidelines and toolkits for vaccine storage, transportation and deployment.
- Conduct quality assurance of cold chain equipment and delivery systems.
- Establish an inventory management system that monitors and communicates vaccine supply and requirements at all needed levels.
- Develop and implement a strategy for vaccine distribution and identification of vulnerable populations to ensure equitable access to vaccines.
- Monitor, evaluate and amend national and subnational vaccination projects and programmes based on lessons learned from real or simulated implementation and changes needed in the community.

## 04 DEMONSTRATED CAPACITY

- Involve the government in international initiatives for joint purchase of vaccines and facilitate negotiation with manufacturers on prices as well as desired product profiles to avoid inflation and unfair competition during health emergencies.
- Develop training and exercises for hazard-specific response and management plans with relevant sectors, agencies and other stakeholders.
- Develop tools for staff in relevant sectors at national and subnational levels to work towards global standardization of all steps of vaccines access and delivery.

Participation and contribution of other sectors to actions:

1, 2, 3, 5, 6, 7, 8, 9, 10

- Implement processes to ensure efficient customs clearance of vaccines by relevant authorities, particularly in emergency contexts.

## 05 SUSTAINABLE CAPACITY

- Secure sustainable funding for vaccine delivery systems, including for procurement and routine repair of cold chain equipment (e.g. cooled and financed multiyear operation plans).
- Establish cold chain for vaccine delivery to more than 80% of districts or more than 80% of the target population in the country.
- Assess vaccine delivery in priority areas and/or populations (identified based on existing coverage, registry and/or surveillance data), and use results to improve vaccine delivery.
- Routinely analyse the inventory management system to monitor vaccine supply needs and forecast requirements, with anticipated procurement.
- Establish functional national bodies to assess and recommend an evidence-based national vaccine policy and routinely complete a qualitative and quantitative inventory of the strategic national vaccine stockpile.
- Engage research platforms to generate evidence on immunization to improve service delivery and meet the needs of diverse communities, including identifying successful strategies to reduce inequities, improve the quality and delivery of immunization services, improve delivery approaches for life-course immunization.

Participation and contribution of other sectors to actions:

1, 2, 3, 6

<b>BENCHMARK 7.3: An effective mechanism for mass vaccination of epidemics of vaccine preventable diseases (VPD) is in place</b>	
<b>OBJECTIVE: To strengthen capacity for mass vaccination in response to VPD epidemics</b>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> NO CAPACITY	<ul style="list-style-type: none"> <li>● No contingency plans or mechanisms for mass vaccination response to outbreaks of VPD are in place.</li> </ul>
<b>02</b> LIMITED CAPACITY	<ul style="list-style-type: none"> <li>● Include in the ToRs of a national advisory committee on immunization planning for mass vaccination for epidemics of VPDs (including vaccines for novel pathogens) and a decision framework for use of mass vaccination.</li> <li>● Develop and include contingency plans for mass vaccination deployment for at least one priority VPD outbreak (e.g. Ebola virus disease, measles, yellow fever, cholera, meningococcus, polio, etc.) – including the use of new vaccines – in the national immunization plan. The strategy should include storage, cold chain and distribution capacities, required consumables, potential target populations and engagement of relevant sectors for implementation.</li> <li>● Conduct a situational analysis on fast-track approval and procurement process for new vaccines/pharmaceuticals – from both new and existing suppliers – and identify regulatory and importation mechanisms for new and experimental vaccines during epidemics of novel pathogens.</li> <li>● Establish a technical working group endorsed by advisory committee on immunization to work as a knowledge hub to get updates on research, development and global stock details related to vaccines for novel pathogens and report to the advisory committee to support planning for mass vaccination campaigns as needed.</li> <li>● Designate staff to lead planning and implementation of mass vaccination campaigns for VPD outbreaks.</li> <li>● Include quality assessment and emergency approval for the use of new and experimental vaccines in epidemics of VPD into national fast-track policy for approval of new pharmaceutical products.</li> </ul> <p>Participation and contribution of other sectors to actions: 1, 2, 3, 4, 6</p>

## 03 DEVELOPED CAPACITY

- Assess and streamline the regulatory processes for sourcing and importing vaccines for VPD outbreak response, including new and existing vaccines.
- Develop and implement national and subnational deployment plans, including basic microplanning, for multiple types of VPD outbreaks including the use of new vaccines. Plans should examine potential impacts of various risk-based, equity-based and other approaches.
- Develop and validate SOPs related to the roles and responsibilities of health workers and others for the emergency procurement process of new vaccines in epidemics of novel pathogens to ensure safety, quality, supply chain management, vaccination technique, AEFI reporting, etc.
- Develop a curricular framework, training plan and materials for mass vaccination campaigns for priority VPD outbreaks.
- Develop or adapt national systems to monitor coverage of new and experimental vaccines, vaccine safety and adequate reporting of serious AEFIs (e.g. WHO target of a least one serious AEFI reported per 1,000,000 population per year) detailing the roles, responsibilities and monitoring and reporting mechanism at all levels.
- Collaborate with existing RCCE efforts to develop proactive strategies to increase acceptance of mass vaccination and address infodemics using real-time social listening with clear linkage to AEFI surveillance programs.
- Establish a mechanism for donor and donation management for access/availability of new vaccines for novel pathogens and quality/safety assurance for in-country use.

Participation and contribution of other sectors to actions:

1, 2, 3, 5, 6, 7

## 04 DEMONSTRATED CAPACITY

- Conduct SimEx/AAR/IAR (as relevant) for mass vaccination campaigns during epidemics of VPD in collaboration with relevant sectors, to identify functionality, bottlenecks, best practices and assess performance of RCCE activities. Revise SOP and deployment plans accordingly.
- Validate training materials and tools and for mass vaccination campaigns during VPD outbreaks (including infodemic management) and conduct training at subnational levels.
- Enhance integration between disease surveillance and other information systems (e.g. AEFI) to provide data for decision-making in VPD outbreak response.
- Implement monitoring and reporting of coverage and safety of vaccines used in mass vaccination campaigns at all levels.

- Increase storage capacity and improve logistic management information systems for vaccines and consumable supplies at subnational and local levels, as needed.
- Develop tailored strategies and relevant criteria for mass vaccination campaigns to ensure equity and equality in access to vaccination (including hospitals, community vaccination centres, mobile vaccination sites, home visits to disabled and elderly, etc).
- Implement emergency budget/provisions for reallocation of funds to emergency mass vaccination campaigns, as a national priority.

Participation and contribution of other sectors to actions:

1, 5, 6, 7

## 05 SUSTAINABLE CAPACITY

- Sustain supply of vaccines for mass vaccination campaigns and test vaccine surge capacities, storage capacities and distribution systems at all levels and resolve challenges identified.
- Secure contingency funding for mass vaccination of epidemics of VPD in the national health budget, including ability to reallocate funding during health emergencies.
- Sustain microplans for reaching all individuals within target populations during mass vaccination campaigns for VPD outbreaks.
- Develop vaccination contingency plans for responding to novel disease scenarios.
- Share best practices and lessons learned in mass vaccination campaigns, with a focus on ensuring access/availability of vaccines, at national and international forums to engage the country in peer-to-peer learning.
- Develop innovative tools to support information and education campaigns on mass vaccination including development of new platforms, social media tools, and mobile and internet-based technologies based on lessons learned from previous campaigns, communications and social marketing efforts.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6

- Effective contribution by relevant sectors for the sustainable supply of vaccines.



## Tools:

- Essential Programme on Immunization [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/teams/immunization-vaccines-and-biologicals/essential-programme-on-immunization>).
- Measles & Rubella Initiative, American Red Cross, Centers for Disease Control and Prevention, United Nations Children's Fund, United Nations Foundation and World Health Organization. Global Vaccine Access Plan [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/teams/immunization-vaccines-and-biologicals/strategies/global-vaccine-action-plan>).
- Measles and rubella strategic framework: 2021–2030. Geneva: World Health Organization; 2020 (<https://www.who.int/publications/i/item/measles-and-rubella-strategic-framework-2021-2030>).
- Bill & Melinda Gates Foundation, Centers for Disease Control and Prevention, World Health Organization, United Nations Children's Fund, John Snow Inc, GAVI the Vaccine Alliance. Global Routine Immunization Strategies and Practices (GRISP). A companion document to the Global Vaccine Action Plan. Geneva: World Health Organization; 2016 ([https://www.who.int/publications/i/item/global-routine-immunization-strategies-and-practices-\(grisip\)](https://www.who.int/publications/i/item/global-routine-immunization-strategies-and-practices-(grisip))).
- Planning and implementing high-quality supplementary immunization activities for injectable vaccines using an example of measles and rubella vaccines: field guide. Geneva: World Health Organization; 2016 (<https://www.who.int/publications/i/item/9789241511254>).
- Training for mid-level Managers (MLM): module 3: immunization safety. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/337054>).
- Immunizations, Vaccines and Biologicals. WHO recommendations for routine immunization – summary tables. Geneva: World Health Organization; 2023 (<https://www.who.int/teams/immunization-vaccines-and-biologicals/policies/who-recommendations-for-routine-immunization---summary-tables>).
- Surveillance standards for vaccine-preventable diseases, 2nd edition. Geneva: World Health Organization; 2018 (<https://www.who.int/publications/i/item/surveillance-standards-for-vaccine-preventable-diseases-2nd-edition>).
- Immunization Agenda 2030: A Global Strategy to Leave No One Behind. Geneva: World Health Organization; 2020 (<https://www.who.int/teams/immunization-vaccines-and-biologicals/strategies/ia2030>).
- Guidance on operational microplanning for COVID-19 vaccination, revised 2 May 2023. Geneva: World Health Organization; 2023 (<https://www.who.int/publications/i/item/WHO-2019-nCoV-vaccination-microplanning-2023.1>).
- Simulation exercises [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/emergencies/operations/simulation-exercises>).



- WHO simulation exercise manual: a practical guide and tool for planning, conducting and evaluating simulation exercises for outbreaks and public health emergency preparedness and response. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254741>).
- Guidance for after action review (AAR). Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/311537>).
- Guidance for conducting a country COVID-19 intra-action review. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/333419>).

# 08

## Biosafety and biosecurity

A whole-of-government multisectoral national biosafety<sup>47</sup> and biosecurity<sup>48</sup> system with biological agents of high consequence<sup>49</sup> identified, held, secured and monitored in a minimal number of facilities according to best practices<sup>50</sup>. Country-specific biosafety and biosecurity legislation, laboratory licensing and pathogen control measures are in place as appropriate, and on include risk- and evidence-based approaches. Biological risk management training and educational outreach are conducted to promote a shared culture of responsibility<sup>51</sup>. Reduce high consequence research activities where appropriate to mitigate risks associated with dual-use research of concern and proliferation of biological agents of high consequence, for examples. Safe and secure transport and transfer of infectious substances are ensured.



### IMPACT:

A comprehensive, sustainable and legally embedded national oversight programme for biosafety and biosecurity which includes the safe and secure use, storage, disposal and containment of biological agents of high consequence in all laboratory and holding facilities across human health, animal health and agricultural sectors. Strengthened, sustainable biological risk management best practices are in place in relevant sectors and safe and compliant transport of infectious substances occurs according to national and international regulations.



### MONITORING AND EVALUATION:

(1) Existence of a national framework for biosafety and biosecurity, strain collections and containment laboratories that includes identification and storage of national strain collections in a minimal number of facilities from relevant sectors. (2) Existence of a comprehensive oversight and monitoring system.

<sup>47</sup> *Laboratory biosafety describes the containment principles, technologies and practices that are implemented to prevent unintentional exposure to pathogens and toxins or their accidental release (refer to WHO's Laboratory biosafety manual, 4th edition).*

<sup>48</sup> *Laboratory biosecurity describes the protection, control and accountability for valuable biological materials within laboratories, as well as information related to these materials and dual-use research, to prevent their unauthorized access, loss, theft, misuse, diversion or intentional release.*

<sup>49</sup> *Refer to The Australia Group's list of human and animal pathogens and toxins for export control.*

<sup>50</sup> *Minimal/best practices, as referred in WHO's Laboratory biosafety manual, 4th edition.*

<sup>51</sup> *Refer to Responsible life sciences research for global health security: a guidance document.*

<b>BENCHMARK 8.1: Whole-of-government biosafety and biosecurity system is in place for relevant sectors including human, animal (domestic animals and wildlife) and agricultural facilities</b> <b>OBJECTIVE: To develop and implement a biosafety and biosecurity system for relevant sectors including human, animal (domestic animals and wildlife) and agricultural facilities to minimize the risk of accidental or intentional infection of laboratory staff or release of biological agents of high consequence</b>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● Elements of a comprehensive national biosafety and biosecurity system, such as policy instruments and proper financing, are not in place.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Establish a multisectoral technical advisory board to advise and guide decision-makers in relation to risk- and evidence-based recommendations for mitigating and managing biosafety and biosecurity threats and incidents that may arise.</li> <li>● Review and develop or revise national legislation and regulations for biosafety and biosecurity in the human health, animal health and agricultural sectors.</li> <li>● Identify and document human and animal health facilities that store and maintain biological agents of high consequence and toxins and health professionals responsible for them.</li> <li>● Identify all departments, facilities and settings that handle or may handle biological agents of high consequence and toxins in relevant sectors (e.g. food safety, agriculture, points of entry, internal security, fire services, defence, customs, postal services, waste management, agriculture, etc.).</li> <li>● Establish a mechanism for laboratory licensing in relevant sectors and ensure that biosafety and biosecurity requirements are included in general licensing requirements.</li> <li>● Conduct assessments of current biosafety and biosecurity practices, procedures and policies at the national level.</li> <li>● Develop biological management measures, including options for containment, operational handling and failure of reporting systems.</li> </ul>
Participation and contribution of other sectors to actions: 1, 2, 3, 4, 5, 6, 7	
<ul style="list-style-type: none"> <li>● Conduct a biosafety and biosecurity assessment of animal health laboratories to identify critical needs.</li> </ul>	

## 03 DEVELOPED CAPACITY

- Develop a national biosafety and biosecurity regulatory framework, including guidelines and recordkeeping obligations for all laboratories working with biological agents of high consequence.
- Develop and maintain inventories for biological agents of high consequence.
- Secure biological agents of high consequence and toxins at a minimum number of national level laboratories.
- Develop and test SOPs that include standard requirements of PPE and other safety measures for departments, facilities and settings that store, maintain or handle biological agents of high consequence and toxins.
- Establish an information security system for all sensitive documentation in facilities where biological agents of high consequence and toxins are stored.
- Develop a strategy for identifying and preventing biohacking and unsafe research performed outside of official laboratories, including safety oversight associated with biosafety regulations in collaboration with internal security and defence staff.
- Implement national biosafety and biosecurity regulations and guidelines in relevant sectors (e.g. human health, animal health, agriculture, defence, etc.) with standardized classification and accreditation that cover pathogen control and personnel reliability programme requirements.
- Recommend alternative laboratory techniques that are associated with a lower risk to replace the need for proliferation of biological agents of high consequence.
- Develop incident and emergency response programmes for facilities storing biological agents of high consequence and toxins.
- Develop and implement equipment operation and maintenance plans at laboratories storing biological agents of high consequence or security concern.
- Establish biosafety and biosecurity officers and, where necessary, biosafety and biosecurity committees at least in national reference laboratories (with potential expansion to all laboratories across relevant sectors), supported by the appropriate regulatory base, training or certification, and competency.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

- Conduct a risk assessment and survey for accidental or intentional misuse of biological agents of high consequence and toxins in relevant sectors.

## 04 DEMONSTRATED CAPACITY

- Implement the biosafety and biosecurity national framework in all laboratories at the national and subnational levels.
- Develop site-specific biosafety and biosecurity supporting documents that include incident and emergency response plans (e.g. in case of explosion, fire, flood, worker exposure, accident or illness, major spillage, waste management, etc.) for laboratories at national and subnational levels.
- Develop SOPs for identifying and addressing high consequence research, such as dual-use aspects of research, and include a responsible code of conduct for scientists and other staff.
- Develop and implement an incident reporting system that includes identifying incidents, reporting according to regulations, and addressing action items that improve safety and security. Share reports with the relevant sectors.
- Establish external monitoring and oversight of biosafety and biosecurity programmes and activities.
- Develop guidelines and procedures for the management of suspicious packages (for example, Anthrax letters) in collaboration with relevant sectors (e.g. police, defence, postal services, customs, etc.) at national and subnational levels.
- Develop a national strategic stock of medicines (including antibiotics, antitoxins, serums and vaccines) for prevention or emergency treatment related to biosafety or biosecurity threats and incidents.
- Conduct SimEx to test procedures for the management of biosafety and biosecurity threats and incidents and confirm functionality.
- Develop (in collaboration with occupational health services and other relevant parties) protocols for emergency care of workers and victims of biosafety- and biosecurity-related incidents, procedures for emergency medical evacuation to specialized health facilities, and decontamination protocols.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8, 9

- Share records of biosafety- and biosecurity-related threats and incidents occurring in relevant sectors with health authorities.

## 05 SUSTAINABLE CAPACITY

- Secure sustainable funding and oversight and enforcement mechanisms to support biosafety and biosecurity programmes and initiatives at the ministry level.
- Maintain records of all biosafety and biosecurity accidents that happen in the country to preserve institutional memory, inform risk assessment and mitigation review, and enable improvements to biosafety and biosecurity policies and practices.
- Establish mandatory reporting of all laboratory-associated infections, at least on annual basis.
- Adjust strategy, guidance and protocols for management of biosafety and biosecurity threats and incidents based on M&E exercises.
- Evaluate implementation of national biosafety and biosecurity legislations and practices, and document and generate best practices for biosafety and biosecurity arrangements which are aligned with international best practices at all levels.
- Contribute to international surveillance information sharing and risk assessments for biosafety and biosecurity at the global level.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6

<b>BENCHMARK 8.2: Biosafety and biosecurity training and practices in relevant sectors including human health, animal health (domestic animals and wildlife) and agriculture are in place</b> <b>OBJECTIVE: To develop a public health workforce that is trained and available to enable early detection, prevention, preparedness and response to potential events of international concern at all levels of the health system to effectively implement IHR</b>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● No biosafety and biosecurity training programme or plans are in place in any sector.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Assess biosafety and biosecurity training needs and gaps in relevant sectors.</li> <li>● Conduct an engagement meeting to develop biosafety and biosecurity training programmes that align academic curricula with international best practices.</li> <li>● Develop training programmes for both trainers and trainees as required.</li> <li>● Emphasize risk- and evidence-based approaches to biosafety and biosecurity and include risk assessment in training programmes and curricula.</li> <li>● Identify and create a directory of laboratory staff that have basic training, at least, in biosafety and biosecurity working in laboratories and related fields.</li> <li>● Identify laboratory staff by category that require training in biosafety and biosecurity, determine the level of training required and conduct required training regularly.</li> </ul>
Participation and contribution of other sectors to actions: 1, 2, 3, 4, 5, 6	

## 03 DEVELOPED CAPACITY

- Adapt in-service and continuing education training curricula, SOPs, toolkits, good microbiological practices and procedures, risk assessment and procedures to comply with biosafety and biosecurity rules and regulations and align with international best practices.
- Train and oversee facilities that are housing or working with biological agents of high consequence and toxins to comply with biosafety and biosecurity rules and regulations.
- Begin developing sustained academic curricula, continuing education and training programmes for biosafety and biosecurity that align with international best practices.
- Develop and/or adapt biosafety and biosecurity training module for specialized and continuing education of healthcare professionals.

Participation and contribution of other sectors to actions:

1, 2, 3

- Develop specific training programmes on biosafety and biosecurity for staff in relevant sectors (e.g. animal health, defence, security, points of entry, etc.).

## 04 DEMONSTRATED CAPACITY

- Implement training programmes and oversight to assess compliance with biosafety and biosecurity rules and regulations, and ensure alignment with international best practices.
- Implement sustainable training programmes, that are aligned with international best practices, in institutions that train those who maintain or work with biological agents of high consequence and toxins.
- Review training programmes and needs assessments on a regular basis and update training materials and curricula as required.
- Conduct mandatory training on biosafety and biosecurity for all staff working with biological agents and biological materials of high consequence and toxins.

Participation and contribution of other sectors to actions:

1, 2, 3, 4

- Align relevant sector training programmes in biosafety and biosecurity with health sector trainings.



## 05 SUSTAINABLE CAPACITY

- Guarantee sustained funding from the national government to support training programmes.
- Include biosafety and biosecurity training courses in university curricula of pre-training education in human and animal health programmes.
- Implement periodic training programmes on emergency response procedures.
- Participate in international initiatives to support capacity-building and staff training at the global level.

Participation and contribution of other sectors to actions:

1, 2, 3, 4

### Tools:

- Laboratory biosafety manual, 4th edition. Geneva: World Health Organization; 2020 (<https://www.who.int/publications/item/9789240011311>).
- WHO guidance on implementing regulatory requirements for biosafety and biosecurity in biomedical laboratories: a stepwise approach. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/332244>).
- Guide to participating in the confidence-building measures of the biological weapons convention. Revised edition 2015. Geneva: United Nations Office for Disarmament Affairs; 2015 (<https://disarmament.unoda.org/publications/more/cbm-guide>).
- Responsible life sciences research for global health security: a guidance document. Geneva: World Health Organization; 2010 (<https://apps.who.int/iris/handle/10665/70507>).
- List of human and animal pathogens and toxins for export control [website]. The Australia Group; 2022 ([https://www.dfat.gov.au/publications/minisite/theaustraliagroupnet/site/en/human\\_animal\\_pathogens.html](https://www.dfat.gov.au/publications/minisite/theaustraliagroupnet/site/en/human_animal_pathogens.html)).
- Simulation exercises [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/emergencies/operations/simulation-exercises>).
- WHO simulation exercise manual: a practical guide and tool for planning, conducting and evaluating simulation exercises for outbreaks and public health emergency preparedness and response. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254741>).

# 09

## National laboratory system

Surveillance with a national laboratory system<sup>52</sup> including relevant sectors, particularly human and animal (domestic animals and wildlife) health, and effective modern point-of-care and laboratory-based diagnostics are in place.



### IMPACT:

Effective use of a nationwide laboratory system, including relevant sectors, capable of timely, safely and accurately detecting and characterizing pathogens causing epidemic-prone disease, including both known and unknown threats, from all parts of the country. Expanded deployment, utilization and sustainable use of modern, safe, secure, affordable and appropriate diagnostics tests or devices is established.



### MONITORING AND EVALUATION:

(1) A nationwide laboratory system that is able to reliably conduct tests<sup>53</sup> for priority diseases using appropriately identified and collected specimens that are transported safely and securely to accredited laboratories from the majority (at least 80%) of subnational levels/districts in the country. (2) Existence of national quality laboratory standards and systems for licensing laboratories.

<sup>52</sup> A national laboratory system is a collaborative community of clinical laboratories, public health laboratories and many individual partners who initiate tests and/or use test results.

<sup>53</sup> The test list in each country includes six testing methods selected to align with the IHR's immediately notifiable list and WHO's top 10 causes of death in low-income countries: polymerase chain reaction testing for influenza virus; virus culture for poliovirus; serology for HIV; microscopy for *M. tuberculosis*; rapid diagnostic testing for *Plasmodium* spp.; and bacterial culture for *Salmonella enterica* serotype typhi. These six methods are critical to the detection of epidemic-prone emerging diseases. Competency in these methods is indicated by successful testing for the specific pathogens listed. The remaining tests should be selected by the country based on major national public health concerns.

## BENCHMARK 9.1: Specimen referral and transport system is in place for relevant sectors

OBJECTIVE: To strengthen specimen referral and transport system

### CAPACITY LEVEL

**01**  
NO CAPACITY

### BENCHMARK ACTIONS

- No system in place for transporting specimens from peripheral/rural/district levels to national laboratories, or only ad hoc transportation is available.

**02**  
LIMITED  
CAPACITY

- Map existing laboratory capacity for priority diseases and establish referral networks for priority pathogens.
- Map any existing general or disease specific specimen transport networks.
- Draft national guidance for the collection, management, storage and transportation of specimens for priority diseases and disseminate to all levels.
- Develop training packages for health workers on specimen collection (e.g. stool, throat swab, urine, blood, etc.), secured packing and storage before transportation for suspected cases of priority diseases.
- Establish a service agreement with a courier company (public or private) where gaps exist and cannot be filled by existing transportation and referral systems. The service agreement should include defined safety and quality norms and standards for transportation of priority specimens in the public sector throughout all major subdivisions of the country and with the possibility to expand capacity when required.
- Establish agreements with neighbouring and partner countries to facilitate border crossing with a dangerous specimen for timely and appropriate testing of samples abroad as required.
- Establish mechanisms to ship specimens internationally in a timely manner for diagnosis or confirmation including:
  - Prepare material transfer agreements
  - Identify courier companies with capacity to ship specimens
  - Document availability of staff certified to pack and ship infectious materials
  - Assess all logistic needs for specimen referral and transport systems.
- Involve relevant sectors for specimen referral and transport systems both at national and subnational levels.

- Develop and maintain a regularly updated list of specimen transportation systems operating in relevant sectors.
- Establish a mechanism for utilizing shipping from relevant sectors to transport a broader range of specimens when capacity is limited.

Participation and contribution of other sectors to actions:

1, 2, 3, 5, 6, 7, 8, 9, 10

- Establish a mechanism for transporting animal specimens to animal health laboratories within district or at the subnational and national level or obtain access to national or international reference laboratories for priority zoonotic diseases.
- Develop or revise tools, guidance, SOPs on specimen referral and transport for priority zoonotic diseases.
- Expand service agreements with courier services (public or private) for transporting most priority pathogens from subnational to national level (or from all subnational levels to reference laboratories).
- Train health workers on sample collection, secured packing and storage before transportation for suspected cases of priority diseases.
- Train staff from courier companies and health facilities on appropriate management of specimens from suspected cases of priority diseases.
- Establish formal agreements with neighbouring and partner countries if they are responsible for testing referred specimens.
- Provide prepositioned outbreak investigation kits (i.e. sample collection and transportation kits) at subnational levels and facilities as applicable.
- Develop a system for data collection, analysis and M&E for specimen referral and transport system, including turnaround time and specimen integrity.

Participation and contribution of other sectors to actions:

1, 3, 4, 5, 6

- Develop strategy, tools and procedures in relevant sectors to reinforce the safety and security of specimen referral and transport.
- Conduct trainings on sample shipment and referral in relevant sectors.

## 03 DEVELOPED CAPACITY

## 04 DEMONSTRATED CAPACITY

- Establish an efficient transport mechanism for all priority disease specimens from all levels.
- Provide prepositioned outbreak investigation kits (i.e. sample collection and transportation kits) at all levels and facilities.
- Conduct regular reviews of specimen transportation systems to confirm that specimens are being transported promptly and in a manner that maintains safety and specimen quality.
- Establish a system to collect and test specimens from hard-to-reach areas.
- Organize and support training programmes on M&E of specimen referral and transport system, for all relevant stakeholders (e.g. courier companies, customs, animal health and environment officers, etc.).
- Conduct SimEx/AAR/IAR (as relevant), with relevant sectors, to assess the functionality of specimen referral systems in health facilities (including public and private) at all levels.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6

## 05 SUSTAINABLE CAPACITY

- Conduct training exercises to develop a pool of shippers that is trained on infectious substances and is always available, including for international shipments.
- Allocate sustainable funding to maintain national standards of specimen collection, handling, preservation, protection, transportation, disposal, packaging, and import and export procedures.
- Implement a national mechanism for collecting safety data and incident reporting for any transport incidents involving infectious substances.
- Share experiences in specimen referral and transport system and engage the country in peer-to-peer learning programmes at the subnational, national and international levels.

Participation and contribution of other sectors to actions:

1, 2, 3, 4

**BENCHMARK 9.2: Laboratory quality system is in place**  
**OBJECTIVE: To ensure laboratory quality implementation**

**CAPACITY LEVEL**

**BENCHMARK ACTIONS**

**01**  
**NO CAPACITY**

- There are no quality standards for laboratories in place or under development.

**02**  
**LIMITED CAPACITY**

- Establish an independent unit or laboratory working group at the national level to oversee laboratory services and develop national laboratory strategy and quality standards.
- Develop minimum standards for certification or licensing, using international standards adapted to local settings, as part of the laboratory regulation system.
- Develop a roadmap for laboratory inspections, licensing and accreditation, in line with the national laboratory strategy.
- Identify and map laboratories (public and private sector) based on prevailing national standards for licensing, certification and accreditation at all levels.
- Establish a quality assessment programme for national or central laboratories for diagnostics of diseases with epidemic potential.
- Develop and disseminate SOPs, along with checklist(s), for maintaining laboratory quality standards in both public and private health sectors.
- Identify modules that include laboratory quality standards in the curricula of undergraduate and postgraduate studies in relevant fields (e.g. medicine, laboratory technicians and other relevant health workers) and propose revisions and updates as needed.
- Identify existing legal frameworks for laboratory quality management system as applicable to all relevant laboratories.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8

- Map existing quality standards in relevant sectors.
- Provide basic training on quality assessment for focal points from relevant sector laboratories (e.g. animal, agriculture, etc.).

## 03 DEVELOPED CAPACITY

- Develop and publish national guidance on registration procedures for in vitro diagnostic devices and other relevant devices.
- Establish a national quality assessment programme for peripheral laboratories testing for diseases with epidemic potential.
- Implement a system of inspecting and licensing laboratories, including using local adaptations of international standards and norms and obtaining required funding and human resources, including training/retraining of laboratory staff in the inspection of laboratories according to minimum standards.
- Implement minimum standards for certification or licensing using international standards adapted to the local setting, develop a system for regulation of laboratories, and allocate sufficient funding and human resources for implementation.
- Train and/or retrain health workers on laboratory quality principles and procedures.
- Update undergraduate and postgraduate curricula of relevant fields (e.g. medicine, laboratory technicians and other relevant health workers) to include laboratory quality standards in relevant modules.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 6

- Identify minimum standards to obtain licenses for laboratories in relevant sectors.
- Enhance laboratory quality management system involving experts from relevant sectors.
- Provide advanced trainings on international laboratory standards (e.g. ISO) and other standards for implementation of quality assessment systems in relevant sectors.

## 04 DEMONSTRATED CAPACITY

- Implement a mandatory licensing programme for national and subnational public health laboratories (including laboratories in the private sector) and issue licenses in conformity with national quality standards.
- Obtain WHO accreditation for selected laboratories for disease specific testing (e.g. polio, HIV genotyping, measles, etc.).
- Implement national quality standards for both public and private sector laboratories that align with international norms and standards.
- Conduct quality assurance programmes for all core tests.
- Design a domestic external quality assessment programme for all priority tests or oversee testing with international external quality assessment schemes.
- Conduct planned or unannounced quality assessments and inspections of public and private laboratories, in line with the national laboratory strategy and involving relevant sectors (including human and animal health, food safety, security, energy, water and sanitation, waste management, agriculture, etc.).



- Support operational research programmes to generate evidence on laboratory quality management systems to improve laboratory quality at all levels.
- Conduct regular M&E for laboratory quality assurance programmes.

Participation and contribution of other sectors to actions:

1, 3, 4, 5, 6, 7, 8

- Implementation of laboratory licensing processes by relevant sectors.

- Accredited all national reference laboratories in line with international standards (e.g. ISO 15189 for health laboratories).
- Update existing laboratory strategies, guidelines and procedures for laboratory quality based on lessons learned from M&E activities.
- Implement a national external quality assurance programme including microbiology, virology, serology, parasitology, etc. in relevant sector laboratories (public and private).
- Organize corrective actions based on the results of external quality assessments and recommendations from reviews and supervisions.
- Improve the national plan for quality management system compliance at all levels in public and private laboratories through continuous quality improvement, based on analysis of country experiences.
- Allocate sustainable funding for laboratory quality assurance programmes.
- Share experiences in laboratory quality management system and engage the country in peer-to-peer learning programmes at the subnational, national and international levels.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7

- Comply with external quality assurance programmes and implement recommendations.
- Accredited all national reference laboratories in accordance with international standards in relevant sectors.

## 05 SUSTAINABLE CAPACITY



<b>BENCHMARK 9.3: Laboratory testing for detection of priority diseases is in place</b> <b>OBJECTIVE: To strengthen laboratory testing capacities for detection of priority diseases</b>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● Country has not taken a risk-based approach to determine testing modalities for priority diseases.</li> <li>● Testing for priority diseases relies only on point of care testing (POCT) and/or other simple testing modalities such as microscopy.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Review or develop a list of priority diseases for the country and update (compile) supporting evidence to perform a national risk assessment for each disease.</li> <li>● Develop surveillance data and prioritization methods and a national laboratory testing strategy for each priority disease based on risk assessment findings.</li> <li>● Map/list all laboratories in the country performing public health functions and/or testing for priority diseases.</li> <li>● Assess laboratory algorithms, standards and testing capacities (including equipment inventory) in all laboratories for all identified priority diseases.</li> <li>● Implement rapid testing (antigen and antibody), microscopy, and serological and/or molecular assays for detecting select endemic and priority diseases, based on national testing algorithms.</li> <li>● Develop a plan for conducting assessment visits in national reference laboratories (for priority diseases) to assess capacities in conformity with the national testing strategy, and produce a capacity-building plan for each laboratory to address identified gaps.</li> <li>● Identify (and train, if necessary) a pool of individuals capable of performing assessment visits, and provide ongoing support to national reference laboratories to ensure the implementation of capacity-building plans.</li> <li>● Develop and disseminate testing SOPs along with quality control SOPs for all core tests for priority diseases.</li> <li>● Establish clear SOPs and necessary agreements with international laboratories to perform diagnostic and confirmatory testing of specimens and support outbreak detection and responses when local capacity is not available.</li> <li>● Develop hands-on training curricula for laboratory staff that includes task-based training, refresher training and mentoring in relevant technical and administrative areas for priority diseases.</li> </ul>

- Review law, legislation and regulations relevant to laboratory capacities to perform one or more tests for detection of priority diseases, at national and subnational levels.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

- Develop a mechanism for sharing laboratory testing information between relevant sectors.
- Develop animal health laboratory capacities to detect zoonotic diseases of national importance (e.g. equipment, infrastructure, human resources, training, etc.).
- For animal health sector:
  - Assess regulations, legislation, policies for diagnostic services by animal health laboratories
  - Develop a laboratory system strategy for animal health laboratories including tier-specific roles
  - Put in place basic level of field-based testing (e.g. pen side rapid kits)
  - Provide training on a few diagnostic procedures including serological testing
  - Provide basic training or preliminary advocacy on laboratory leadership and management conducted (e.g. Global Laboratory Leadership Programme)
  - Access to reagents, equipment, consumables and procurement by animal health laboratories.

## 03 DEVELOPED CAPACITY

- Review or update or develop national laboratory policies to reflect strategies and procedures developed for testing priority diseases.
- Train and equip laboratories from relevant sectors involved in laboratory detection of the country's endemic and priority diseases, based on the national testing algorithms and national laboratory administrative and technical structures.
- Supply required equipment to support laboratory tests for priority diseases (such as molecular testing, bacterial culture with AST and access to sequencing, etc.) based on laboratory level in the tiered laboratory network and adhere to recommended maintenance procedures.
- Develop a plan for conducting assessment visits in subnational laboratories that test for priority diseases to assess capacities in conformity with the national testing strategy and produce a capacity-building plan for each laboratory to address identified gaps.
- Identify (and train, if necessary) a subnational pool of individuals capable of performing assessment visits and provide ongoing support to national reference laboratories to ensure the implementation of capacity-building plans.

- Implement national proficiency and quality assurance processes for all tests conducted for the country's endemic and priority diseases.
- Develop capacity for in-country production and procurement processes for acquiring necessary media and reagents to perform laboratory tests for priority diseases.
- Provide funding to implement capacity-building plans for national reference laboratories performing testing for priority diseases as well as ongoing monitoring and assessment visits to assure implementation.
- Establish mechanisms and protocols for timely and appropriate sharing of information generated by laboratory testing in relevant sectors, especially linking laboratory data with surveillance and risk assessment.
- Identify essential tests that the country is currently unable to perform, and prioritize developing that capacity within one year (with domestic or donor funding).
- Conduct SimEx or AAR (as relevant) to test the functionality of laboratory testing capacities for detecting priority diseases at the national level.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

- Map laboratory capacity in relevant sectors for testing human specimens during emergencies.
- Conduct proficiency testing in animal health laboratories for priority zoonotic diseases and encourage pairing of laboratories between human and animal health sectors.
- Draft or review regulations, legislation and policies for animal health laboratories to ensure that they contain essential elements of diagnostic services, including but not limited to:
  - Regular participation in regional laboratory networks and collaboration with regional laboratories when national testing capacities are not available;
  - Trainings on diagnostic techniques, including molecular and sequencing capacities (or access to these capacities) and other areas such as laboratory leadership;
  - Available resources for procurement of reagents, equipment and consumables by animal health laboratories.

## 04 DEMONSTRATED CAPACITY

- Equip subnational laboratories to perform public health functions/testing for all priority diseases using advanced tests (e.g. molecular/nucleic acid tests, bacterial culture, AST, etc.).
- Implement routine sequencing of laboratory samples for endemic and priority diseases as part of national laboratory strategic plan activities and during outbreaks.
- Establish sustainable procurement and stock management systems for laboratory reagents and consumables for all endemic and priority diseases during routine operations and outbreaks.
- Implement assessment and oversight plans for capacity-building in both national reference laboratories and subnational laboratories performing testing for priority diseases.
- Establish collaboration agreements to outsource testing for priority diseases to laboratories in other countries or the private sector when required.
- Conduct SimEx and AAR (as relevant) to test the functionality of laboratory testing capacities for detection of priority diseases at both national and subnational levels.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6

- Assess laboratory capacity in relevant sectors to test human specimens during emergencies.
- Equip and train animal health laboratories to diagnose zoonotic diseases that are not currently present in the country but are present in the region.
- Implement regulations, legislation and policies in animal health laboratories for:
  - Essential elements of diagnostic services with underdeveloped capacity
  - Full implementation of laboratory networking for animal health laboratories strategy
  - Sharing of data, expertise and information among animal health laboratory network.
- Participate in external quality assurance programmes (EQAP) for some priority diseases.

## 05 SUSTAINABLE CAPACITY

- Review and update the available evidence base, risk assessments and testing strategies for priority diseases, based on national surveillance and collection of priority data.
- Secure sustainable national financing for the laboratory system to support ongoing testing of priority diseases.
- Conduct regular inventory and replenish the national strategic stockpile of products and devices to perform tests for the detection of all priority diseases in the event of a health emergency.
- Monitor turnaround times for confirming new, emerging, unknown and high consequence pathogens (including the use of metagenomic and whole genome sequencing) and implement improvement actions regularly.
- Review and update national training curricula to align with current testing capacities and priorities.
- Maintain a consistent pool of individuals available to perform assessment visits in national and subnational laboratories performing testing for priority diseases, with appropriate resources to support ongoing capacity-building efforts.
- Document and share country experiences in laboratory testing for priority diseases and engage the country in peer-to-peer learning programmes at the subregional, national and international levels.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7

- Participate in reviewing and updating the available evidence base, risk assessments and testing strategies for priority diseases that have risk of potential spill over.
- Document and share experiences in laboratory testing for detecting priority zoonotic diseases.

<b>BENCHMARK 9.4: An effective national diagnostic network is in place</b> <b>OBJECTIVE: To establish an effective national diagnostic network</b>	
CAPACITY LEVEL	BENCHMARK ACTIONS
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● No evidence of use of rapid and accurate point-of-care, farm-based diagnostics and/or laboratory-based diagnostics, and no tier-specific diagnostic testing strategies are documented.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Develop a national laboratory policy or regulation that formalizes a tiered diagnostic structure and enables collaboration, information sharing and specimen referral between different tiers of the system, relevant sectors and private laboratories.</li> <li>● Assess national diagnostic capacity and use findings to develop a national plan for strengthening national diagnostic capacity, taking into account available resources within the national health system administration at all levels.</li> <li>● Develop a tiered laboratory network structure to test and monitor the country's priority diseases, ensuring efficient linkages between tiers along the national referral system.</li> <li>● Identify existing point of care and rapid diagnostic tests that are available in-country for the detection of priority diseases.</li> <li>● Assess the feasibility for procurement, validation and use of new point of care and rapid diagnostic tests for priority diseases that are not currently available in-country.</li> <li>● Develop national guidance on the initial evaluation and field validation/quality assurance requirements for all new point of care tests, rapid diagnostic tests and/or in vitro diagnostics introduced for priority diseases.</li> <li>● Develop a legal basis for strengthening collaboration between public and private sector laboratories and partner agencies at both national and subnational levels.</li> <li>● Identify international laboratories with testing capacity for confirmatory diagnostic testing if such capacities are not currently available in-country.</li> </ul> <p>Participation and contribution of other sectors to actions: 1, 3, 4, 5, 6, 7, 8</p> <ul style="list-style-type: none"> <li>● Provide a national laboratory policy that identifies expected capacities at each level of the animal health laboratory system.</li> <li>● Assess and map animal health laboratories as part of the national diagnostic network.</li> <li>● Develop a legal basis to strengthen collaboration between laboratories of relevant sectors.</li> </ul>

## 03 DEVELOPED CAPACITY

- Develop and disseminate SOPs for tiered testing for each priority disease, including point of care and rapid diagnostic tests and specimen referral systems, ideally within the framework of a national laboratory policy for each priority disease.
- Develop in-service training plans for all staff that align with national tiered testing approaches and include task-based training, refresher training, and mentoring in relevant technical and administrative areas.
- Allocate resources (human and material) to conduct appropriate diagnostic testing at the subnational level in line with the SOPs for tiered testing or national laboratory policy.
- Develop a real-time laboratory information management system (LIMS) that can be deployed across the tiered network and interoperable with other health information management systems.
- Collect data from diagnostic networks across the country, share with relevant national authorities including epidemiology departments, and collate with all other health data for regular analysis and planning.
- Conduct SimEx and AAR (as relevant) to monitor and evaluate functionality of the national diagnostic network in routine systems and during health emergencies.

Participation and contribution of other sectors to actions:

1, 2, 3, 6

- Develop mechanisms for availability, accessibility and affordability of laboratory material for all laboratories in the national diagnostic network, including public and private laboratories.
- Incorporate animal health laboratories into the laboratory networking strategy, including tier-specific roles and responsibilities.

## 04 DEMONSTRATED CAPACITY

- Monitor the implementation of point of care and rapid diagnostic tests using national guidance for field validation and quality assurance processes.
- Develop and implement a plan to increase national testing capacity for all priority diseases, including cross-training national laboratory staff in different testing methods.
- Adopt LIMS across the tiered network and within the health system for all priority diseases in the country and support laboratory data reporting by electronic-based methods.
- Establish real-time data sharing with national authorities including epidemiological departments and surveillance and response systems.



- Review stockpiles of diagnostics for priority diseases and ensure stock replenishment and rotation according to anticipated expiration dates of reagents.
- Implement in-service training by ensuring appropriate task-based training, for example using a continuing professional education programme.
- Allocate sustainable funding for laboratory procurement, capacity-building and point-of-care diagnostics.

Participation and contribution of other sectors to actions:

1, 2, 4, 5, 6, 7

- Develop and implement plans to increase national testing capacity for all priority diseases in relevant sectors to support human health laboratory during emergencies.
- Implement the laboratory networking strategy for animal health at the national level, with established linkages between animal health surveillance units and laboratories.

## 05 SUSTAINABLE CAPACITY

- Secure sustainable financing for all tiers of the national laboratory system to support ongoing testing and sequencing of all endemic and priority diseases in the country.
- Develop capacities to conduct advanced molecular and serological testing for confirmation of priority diseases, including the ability to conduct molecular subtyping.
- Revise and update strategies, guidelines, operational plans and SOPs for the national diagnostic laboratory network based on lessons learned and ensure implementation of recommendations from M&E activities conducted.
- Use analysed data results from diagnostic networks and to provide evidence to support adjustment of NHPSPs.
- Share experiences in management of a national diagnostic network and engage the country in peer-to-peer learning programmes at the subregional, national and international levels.

Participation and contribution of other sectors to actions:

1, 2, 3, 5

- Document and share lessons learned and best practices in delivering laboratory services during health emergencies in relevant sectors, including private and animal health.
- Connect animal health and other relevant laboratory networks to regional and global networks.
- Regularly conduct simulations, such as joint laboratory exercises, to assess and review strategies in place.



## Tools:

- World Health Organization, Clinical and Laboratory Standards Institute WHO Collaborating Center and Center for Disease Control and Prevention. Laboratory quality management system handbook. Geneva: World Health Organization; 2011 (<https://www.who.int/publications/i/item/9789241548274>).
- Laboratory Quality Stepwise Implementation Tool [website]. Geneva: World Health Organization; 2015 (<https://extranet.who.int/lqsi/content/homepage>).
- WHO LQSI tool in the form of a website that provides a stepwise plan to guide medical laboratories toward implementing a quality management system in compliance with ISO 15189 or national standard with similar requirements.
- Stepwise implementation of a quality management system for a health laboratory. Cairo: WHO Regional Office for the Eastern Mediterranean; 2016 (<https://apps.who.int/iris/handle/10665/249570>).
- Methodology for Prioritizing Severe Emerging Diseases for Research and Development. Geneva: World Health Organization; 2017 ([https://cdn.who.int/media/docs/default-source/blue-print/prioritizing-methodology.pdf?sfvrsn=a8e808c\\_4](https://cdn.who.int/media/docs/default-source/blue-print/prioritizing-methodology.pdf?sfvrsn=a8e808c_4)).
- WHO guidance to identify global disease threats; methods can be applied to identifying priority diseases for laboratory testing in countries.
- Strengthening Laboratory Management Toward Accreditation (SLMTA) [website]. Atlanta: Centers for Disease Control and Prevention (<https://www.slmta.org/>).
- A structured quality improvement program that teaches laboratory managers how to implement practical quality management systems in resource-limited settings.
- Laboratory Quality Management System Training Toolkit. Geneva: World Health Organization; 2023 (<https://extranet.who.int/hslp/content/LQMS-training-toolkit>).
- WHO toolkit to train laboratory managers, senior biologists and technologists in quality management systems Stepwise implementation of a quality management system for a health laboratory. WHO EMRO publication adapting the ISO 15189 standard to the context and realities of resource-limited countries, where the requirements of the ISO standard may be too stringent to implement.
- PVS Pathway [website]. Paris: World Organisation for Animal Health; 2023 (<https://www.woah.org/en/what-we-offer/improving-veterinary-services/pvs-pathway/targeted-support/sustainable-laboratory-support/oie-pvs-pathway-laboratory-reports/>).
- Strengthening veterinary diagnostic capacities: the FAO Laboratory Mapping Tool. Rome: Food and Agriculture Organization of the United Nations; 2016 (<https://www.fao.org/documents/card/en/c/e13cf0b7-c8f4-4ff7-b340-439f40c677ec/>).

- The selection and use of essential in vitro diagnostics - TRS 1031. Geneva: World Health Organization; 2021 (<https://www.who.int/publications/item/9789240019102>).
- Simulation exercises [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/emergencies/operations/simulation-exercises>).
- WHO simulation exercise manual: a practical guide and tool for planning, conducting and evaluating simulation exercises for outbreaks and public health emergency preparedness and response. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254741>).
- Guidance for after action review (AAR). Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/311537>).
- Guidance for conducting a country COVID-19 intra-action review. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/333419>).

# 10

## Surveillance

Surveillance is defined under the IHR as the systematic ongoing collection, collation and analysis of data for public health purposes and the timely dissemination of public health information for action. Annex 1 of the IHR outlines core capacities required for surveillance at local/primary, subnational and national public health response levels, including detection, reporting, notification, verification and collaboration activities.

To address the challenges highlighted by the COVID-19 pandemic and other past and current emergencies, the collaborative surveillance concept has been introduced as a core building block of the WHO Framework for Strengthening Global Architecture for Health Emergency Preparedness, Response, and Resilience (HEPR), which proposes key objectives and capabilities for strengthening public health intelligence for improved decision-making. Collaborative surveillance is defined as “the systematic strengthening of capacity and collaboration among diverse stakeholders, both within and beyond the health sector, with the ultimate goal of enhancing public health intelligence and improving evidence for decision making”<sup>54</sup>. This concept promotes the strengthening of routine surveillance capacities (including public health and laboratory surveillance) and health systems monitoring, and collaboration between and beyond these systems to collectively support diverse surveillance objectives and decision-maker needs on a routine ongoing basis and toward health emergency prevention, preparedness, response and recovery.

Benchmark actions listed below are limited to areas related defined by the current JEE indicators (3rd edition):

- D2.1. Earlier warning surveillance function
- D2.2. Event verification and investigation; and
- D2.3. Analysis and information sharing.

Wherever possible, countries should consider the full range of collaborative surveillance objectives, capacities, and subcapabilities in addition to those outlined here, as well as other related benchmarks, during the prioritization of actions.

<sup>54</sup> *Defining collaborative surveillance: a core concept for strengthening the global architecture for health emergency preparedness, response, and resilience (HEPR).*



### **IMPACT:**

Coordinated surveillance systems that collectively address the full range of objectives for monitoring, detecting and responding to prioritized hazards and risks<sup>55</sup>. Strengthened public health intelligence for improved decision making through routine collaboration across key dimensions<sup>56</sup>.



### **MONITORING AND EVALUATION:**

(1) Surveillance for locally prioritized hazards conducted according to international standards. (2) Regular analysis, dissemination and reporting of surveillance data.

<sup>55</sup> Each national and subnational authority should undertake evidence-based assessments of public health risks for planning and prioritization of surveillance activities. Routine and enhanced surveillance activities to address priorities should consider the full event lifecycle: addressing both routine monitoring and emergency needs, including through all stages of emergencies – preparedness, prevention, detection, event and response monitoring, and recovery.

<sup>56</sup> Collaborative surveillance defines four key dimensions of collaboration, including as across diseases and threat surveillance systems, across sectors, across emergency cycles and across geographic levels. Collaboration across key dimensions must be designed and incentivized to satisfy mutual needs, without overloading systems. This may include, for example: routine sharing data, information and intelligence; sharing workforce capacities; applying common/interoperable data platforms and standards to link data sources; conducting joint assessments, investigations and interventions; and strategic alignment of priorities and plans.

BENCHMARK 10.1: Early warning surveillance systems are well established and functional	
OBJECTIVE: To establish a well functional early warning surveillance system	
CAPACITY LEVEL	BENCHMARK ACTIONS
<b>01</b> NO CAPACITY	<ul style="list-style-type: none"> <li>National public health surveillance strategies, capacities and coordination mechanisms do not exist.</li> </ul>
<b>02</b> LIMITED CAPACITY	<p><b>Develop a national public health surveillance strategy, capacities and coordination mechanism based on IHR requirements and priority hazards:</b></p> <ul style="list-style-type: none"> <li>Develop a national public health surveillance strategy, capacities and coordination mechanism based on IHR requirements and priority risks.</li> <li>Identify priority events, diseases and conditions under surveillance based on an all hazards approach.</li> <li>Designate a national public health authority to coordinate surveillance (dedicated unit or department) with surveillance focal persons at subnational and local levels.</li> <li>Finalize operational plans and processes, including training and guidance.</li> <li>Disseminate guidelines and SOPs for health and public health workers (e.g. clinicians, laboratorians, surveillance officers) to support detection and assessment of prioritized risks.</li> <li>Map surveillance stakeholders to improve coordination, avoid duplication of efforts, and identify resources for management and control of priority diseases and risks, including human resources, equipment, digital tools and infrastructure.</li> </ul> <p><b>Establish surveillance mechanisms for the detection of prioritized hazards:</b></p> <ul style="list-style-type: none"> <li>Establish core indicator-based surveillance (IBS) and event-based surveillance (EBS)<sup>57</sup> for priority case and event detection including priority diseases, and disseminate case definitions at national and subnational levels including:             <ul style="list-style-type: none"> <li>Establish health facility and laboratory-based systems for nationally notifiable diseases and conditions (including unusual events);</li> </ul> </li> </ul>

<sup>57</sup> Suggested foundational surveillance approached to address an early warning objective, where contextually appropriate. Other core surveillance approached are necessary for routine/event monitoring and informing interventions (e.g. health service capacity, access and usage monitoring; sentinel surveillance for influenza and other respiratory viruses; laboratory networks for monitoring pathogen characteristics; special investigations and studies).

- Establish community-based surveillance with an emphasis on underserved areas/groups and vulnerable populations, in collaboration with community health worker (CHW)/community health volunteer (CHV) networks operating at the animal-human-environment interface.
- Establish national level public health intelligence functions linked to response capacities.
- Form a multisectoral country task force (with ToRs) to detect, verify and manage events and threats at the animal-human-environmental interface, following a One Health approach and bringing together relevant sectors at the national and subnational levels.
- Establish monitoring and periodic evaluations/reviews of surveillance systems, including review of coverage and gaps for populations and geographic areas with increased vulnerability to prioritize community-based surveillance needs.

Participation and contribution of other sectors to actions:

- 1, 2, 3, 4, 5, 6, 7, 8, 9, 10
- Orient public health surveillance team on the capacity levels of relevant sectors (e.g. animal health, environmental health).
  - Coordinate and collaborate with public health surveillance teams from relevant sectors.

## 03 DEVELOPED CAPACITY

### **Reinforce, implement and enhance public health surveillance strategies, capacities, and coordination and collaboration mechanisms at the national level:**

- Map cross-sectoral surveillance stakeholders and identify focal points for better data/information/intelligence exchange, coordination and collaboration.
- Conduct multisectoral assessments<sup>58</sup> of public health risks at the national level and match surveillance capacities to prioritized hazards.
- Train health and public health workers (e.g. clinicians, laboratorians, surveillance officers) on SOPs for detecting and assessing prioritized risks.
- Develop strategies and mechanisms for cross-border surveillance, such as at points of entry, and regular data- and information-sharing between public health authorities in neighbouring countries

### **Improve existing IBS and EBS systems and establish enhanced surveillance approaches:**

- Expand core IBS and EBS systems, extending coverage to all relevant public and private health services, and other relevant healthcare providers.

<sup>58</sup> For example, using the [WHO Strategic toolkit for assessing risks \(STAR\)](#), or equivalent.

- Establish immediate and weekly reporting mechanisms and feedback loops for reporting units, investigate and assess the reported cases or events with outbreak potential for public health response, link to laboratory results and share information with relevant sectors.
- Conduct regular AAR/IAR of major events.
- Establish and test complementary<sup>59</sup> or more appropriate surveillance approaches to fill identified gaps for prioritized risks.
- Digitize surveillance processes where appropriate, giving prioritization to points of data collection.

Participation and contribution of other sectors to actions:

1, 2, 4, 5, 6, 7, 8, 9

- Train relevant workers (e.g. veterinarians, laboratorians, surveillance officers, etc.) on SOPs for detecting and assessing prioritized risks in relevant sectors.
- Coordinate and collaborate with the public health surveillance team including orientation to other sector capacities (animal health) at subnational level.
- Share information with public health decision-makers on any event that may impact health security.

## 04 DEMONSTRATED CAPACITY

### **Reinforce, implement and enhance public health surveillance strategies, capacities, and coordination and collaboration mechanisms at national and subnational levels:**

- Critically evaluate performance of the constellation of surveillance systems and capacities, including effectiveness and efficiency in respective systems for achieving early warning objectives and driving timely decision-making against locally prioritized risks. Document and disseminate findings and apply recommendations to update and strengthen overall efficiency of strategies, systems and tools.
- Establish decentralized coordination and technical capacities at subnational levels to enable more timely decision-making and response.
- Extend training to all relevant health and public health workers (e.g. clinicians, laboratorians, surveillance officers, etc.) in SOPs for detecting and assessing prioritized risks.

<sup>59</sup> This may include for example, community-based IBS, health service capacity and usage monitoring, centralized media and social media-based EBS, targeted surveillance among specific vulnerable populations (e.g. aged care facilities, IDP communities), syndromic surveillance in specific health service units (e.g. emergency departments), intelligence sharing among One Health partners (e.g. animal health monitoring), and environmental surveillance (e.g. wastewater monitoring).



- Establish community engagement and support communities to establish self-coordinated capacities and systems for community-centred detection, notification and response through integrated approaches between communities, civil societies, primary care and local government.

**Well functioning core and enhanced surveillance through integration of systems and capacities, incorporation of diverse insights and systems that can flexibly respond to diverse emergencies:**

- Integrate or collaborate with surveillance activities where appropriate through consolidation of systems, and by:
  - Applying common/interoperable data platforms and standards
  - Routine exchange of data, information, intelligence and capacities between stakeholders
  - Conducting joint assessments, investigations and interventions
  - Strategic alignment of priorities and plans.
- Extend the use of digital tools across surveillance systems and levels to automate routine data management and reporting processes, and enable greater linkage and interoperability between systems.
- Incorporate contemporary and multidisciplinary insights on hazards, vulnerabilities and risks<sup>60</sup> (e.g. multidimensional poverty index) to better interpret surveillance findings and complement early warning and response activities.
- Review limitations of routine surveillance capacity to surge during emergencies, adjust where possible and preselect contingency tools to fill anticipated gaps.
- Conduct data collection and both routine and ad hoc reporting at health facilities at a high level of quality.
- Conduct joint operational research for the development and testing of surveillance best practices, tools and technologies, and innovative approaches, and translate findings into system improvements.

Participation and contribution of other sectors to actions:

1, 2, 4, 5, 6, 7, 8, 9, 10

- Establish collaboration across key dimensions, ensuring that the exchange of data, information, intelligence and joint activities are designed and incentivised to satisfy mutual needs without overloading systems.
- Incorporate training considerations for relevant workers (e.g. veterinarians, laboratorians, surveillance officers, etc.) into SOPs for detecting and assessing prioritized risks in relevant sectors.

<sup>60</sup> For example, integration of insights from animal health and environment sectors to predict/inform evolving risks, collation and use of indicators of population susceptibility (e.g. vaccine coverage, mobility, multidimensional poverty index, etc.), and integration of social science insights to contextualize surveillance findings.



## 05 SUSTAINABLE CAPACITY

### **Sustain public health surveillance strategies and capacities by widening and deepening collaboration across all key dimensions, routinely exercising to right size collective capacities and ensuring sustainability:**

- Undertake systematic monitoring, evaluation and learning (as outlined in above steps) to continuously identify and correct limitations in routine systems.
- Assess the flexibility of routine surveillance capacity to rapidly surge and adapt during large scale emergencies and plan and adjust where possible.

### **Sustain and streamline core and enhanced surveillance through integration of systems and capacities, incorporation of diverse insights and systems that can flexibly respond to diverse emergencies:**

- Establish and reinforce decentralized surveillance coordination and technical capacities at primary public health levels to enable local use of data for local decision-making and response.
- Routinely apply surveillance findings together with information on hazards, vulnerabilities and risks for predicting and pro-emptively responding to emerging risks (even before the first cases).
- Contribute to local, regional and global surveillance capacity through regional/international networks, support other countries to strengthen their surveillance system and participate in international initiatives to strengthen capacities globally.
- Establish a mechanism to ensure continuous improvement in data quality at health facilities by monitoring, evaluating and adapting data collection and reporting of routine and ad hoc events.
- Advance joint operational research for the development and testing of surveillance best practices, tools and technologies, and innovative approaches, and translate findings into system improvements.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7

- Reinforce collaboration across all key dimensions, ensuring that the exchange of data, information, intelligence and joint activities are designed and incentivised to satisfy mutual needs without overloading systems.
- Sustain contributions to surveillance capacity evaluations and support strategies and mechanisms to integrate and enhance collaboration.

**BENCHMARK 10.2: Well functioning event verification and investigation systems are in place**  
**OBJECTIVE: To establish a robust well functioning early warning, alert and response (EWAR)<sup>61</sup> capacity**

**CAPACITY LEVEL**

**BENCHMARK ACTIONS**

**01**  
**NO CAPACITY**

- Method, process or mechanisms for verifying and investigating detected events does not exist.

**02**  
**LIMITED CAPACITY**

**Develop EWAR core functions:**

- Designate national focal points to prepare and coordinate EWAR capacities and undertake core public health intelligence functions. Establish ToRs to identify and document roles and responsibilities of relevant staff and stakeholders at all levels.
- Prepare for EWAR implementation at national and subnational levels by assessing the capacity of routine surveillance systems, coordination mechanisms, laboratory support and linkage to response.
- Identify existing surveillance data flows and how signal, event and alert data and information are managed at each level.
- Establish tools and systems for standardized collection, management, reporting and sharing of EWAR-associated data.
- Develop or adapt electronic tools for surveillance of public health and health security using unconventional data sources (e.g. traditional media, digital medias, social networks, etc.).
- Link with and establish mechanisms to report alerts internationally and verify signals in line with IHR requirements.
- Develop contextually appropriate methods and SOPs for each level's EWAR core functions and processes.
- Establish multidisciplinary rapid response teams (RRTs) to undertake outbreak/ health emergency investigation and response.

<sup>61</sup> EWAR core functions must operate both routinely and be enhanced during emergencies. These include capacities and processes to undertake early warning (rapid detection and triage of signals that might indicate an outbreak from IBS, EBS or other data sources); alert management (systematic process of managing all incoming information from signal verification to risk assessment and characteristics); and response (triggering public health actions, case finding, and ongoing enhanced surveillance to inform response activities). Key components are further detailed in the [WHO Early warning alert and response \(EWAR\) in emergencies: an operational guide](#).

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8

- Review opportunities for multisectoral collaboration for the detection, verification and assessment of potential public health events.
- Develop and participate in cross-sectoral collaborations with health sector to exchange data, information and intelligence between One Health partners and conduct joint verification of signals, investigations and risk assessments of events related to zoonoses.

## 03 DEVELOPED CAPACITY

### **Implement/strengthen EWAR core functions at national and subnational levels:**

- Designate subnational focal points to coordinate and undertake core functions.
- Establish rapid communication pathways between teams operating across levels and sectors.
- Conduct training and activate EWAR capacities, systems and SOPs at national and subnational levels.
- Digitize EWAR processes as a function of routine surveillance systems where appropriate.
- Improve data flows and routine reporting mechanisms at all levels.
- Interconnect systems with decision-making authorities and resourced capacity for pre-emptive (before the first case) and early action. Identify focal persons/units to receive event details and risk assessments.
- Train public health workers and RRTs and provide adequate resources to undertake outbreak/public health investigations and responses for prioritized risks.
- Develop and implement mechanisms for routine monitoring and periodic evaluation of core EWAR functions.
- Monitor the performance of EWAR functions, systems and capacities across levels and update the EWAR as required.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8, 9

- Implement multisectoral communication and collaboration, such as routine exchange of data, information and intelligence between One Health partners, joint verification of signals, and investigations and risk assessments of events related to zoonoses.

## 04 DEMONSTRATED CAPACITY

### Reinforce EWAR core functions at national and subnational levels, and strengthen collaboration across sectors:

- Establish fully operational core functions at the national and subnational level to provide the timely triage, verification, risk assessment and characterization, investigation, and response to reported cases or events, as well as standardized collection, management, reporting and sharing of associated data. Identify limitations in systems and fill gaps where possible.
- Extend use of digital tools across levels to automate routine data management and reporting processes where appropriate.
- Incorporate contemporary and multidisciplinary insights on hazards, vulnerabilities and risks to complement early warning activities.
- Reinforce outbreak/health emergency investigation and response capacities<sup>62</sup> at national and subnational levels.
- Establish systems that protect electronic tools from cyberattacks to secure sharing of critical information such as personal data, medical confidentiality and classified information.
- Conduct SimEx/AAR/IAR (as relevant) to evaluate the performance of functions, systems and capacities across EWAR levels.
- Document and disseminate SimEx/AAR/IAR findings (as relevant) and apply recommendations to strengthen overall strategies, systems and tools.

#### Participation and contribution of other sectors to actions:

- 1, 2, 3, 4, 5, 6, 7
- Increase collaboration between One Health partners including routine exchange of data and information, incorporation of trained personnel from multiple sectors in RRTs, and undertaking joint signal verification, alert generation, risk assessment of events, investigation and response to relevant alerts.

<sup>62</sup> The focus of efforts to strengthen outbreak/public health emergency investigation and response capacities will vary depending on resource availability, locally prioritized risks and contexts. These may generally include: repositioning contingency tools (i.e. select and resource tools, and train response workforce on how to use them), data management, analytical capacity for undertaking enhanced surveillance and information management during an emergency (e.g. case investigation and line listing, contact tracing, maintaining situational reporting/briefings, etc.), establishing multidisciplinary capacities for special epidemiological/laboratory/clinical studies, etc.

## 05 SUSTAINABLE CAPACITY

### **Reinforce EWAR core functions and collaborations at national and subnational levels, implement/strengthen complementary activities at primary public health levels, and routinely test systems to respond to emergencies:**

- Establish a mechanism to maintain that core functions and cross-sectoral collaboration are operating seamlessly at national and subnational levels. Identify limitations in EWAR systems and fill gaps where possible.
- Conduct necessary training and activate complementary EWAR capacities, systems and SOPs at primary health level; ensuring functions are interconnected with local decision-making and response authorities to affect timely local action.
- Document and share best practices nationally and internationally for peer-to-peer learning.

Participation and contribution of other sectors to actions:

1, 2, 3

- Reinforce collaboration across all key surveillance dimensions and ensure that the exchange of data, information, intelligence and joint surveillance activities satisfy mutual needs without overloading systems.

BENCHMARK 10.3: Surveillance data and information are systematically analysed and shared to inform decision making for action	
OBJECTIVE: To conduct timely and systematic analysis and sharing of data and information and enhance evidence for decision making and action	
CAPACITY LEVEL	BENCHMARK ACTIONS
<b>01</b> NO CAPACITY	<ul style="list-style-type: none"> <li>● Systematic analyses of disease surveillance data for action not conducted or extended delays exist precluding timely action.</li> </ul>
<b>02</b> LIMITED CAPACITY	<p><b>Develop routine analysis and reporting capacities for prioritized hazards under surveillance at national level:</b></p> <ul style="list-style-type: none"> <li>● Review national capacities to undertake analyses of surveillance data.</li> <li>● Develop a training package for data management data collation, analysis, trend analysis and developing reports or weekly surveillance bulletins.</li> <li>● Develop and disseminate guidelines and procedures to assess risks.</li> <li>● Produce ad hoc analysis reports of outbreaks or other public health events based on needs or emerging events and disseminate from the national level.</li> <li>● Establish reporting standards and identify pathways for informing decision-making and response authorities of surveillance findings, as well as broader dissemination.</li> <li>● Map cross-sectoral surveillance stakeholders and identify focal points for coordination, collaboration and the exchange of relevant data, information and intelligence.</li> </ul> <p>Participation and contribution of other sectors to actions: 1, 2, 3, 4, 5, 6</p>
<b>03</b> DEVELOPED CAPACITY	<p><b>Implement routine analysis and reporting for prioritized hazards under surveillance at national level:</b></p> <ul style="list-style-type: none"> <li>● Conduct training on data analysis and report development at national and subnational levels.</li> <li>● Conduct annual or monthly analysis of surveillance data for continuous monitoring of events of potential concern for public health and health security, including routine trend analyses and data quality assessment at national level.</li> <li>● Establish standards and training to integrate data and information sources from multisectoral partners.</li> </ul>

- Establish feedback loops for sharing analytic results, from national to subnational levels at a minimum and across sectors.
- Develop standards and training for quality data collection for routine and ad hoc reporting of unusual or unexpected events at healthcare facility level.

Participation and contribution of other sectors to actions:

- 1, 2, 3, 4, 5
- Develop standards and training for analysis of data by multiple sectors to support joint risk assessment.

## 04 DEMONSTRATED CAPACITY

### **Reinforce routine analysis and reporting for prioritized hazards under surveillance at national level, implement complementary capacity at subnational levels and strengthen collaboration across sectors at all levels:**

- Develop or reinforce standards, content and format for epidemiological bulletins for national and subnational levels and weekly epidemiological reports on priority diseases and ad hoc events, including analysis and risk assessment disseminated at all levels.
- Develop or reinforce standards and training to analyse data from multiple information sources across sectors available at all levels.
- Establish or reinforce capacity to routinely triangulate data from multiple health information and surveillance systems, including from relevant sectors.
- Establish or reinforce existing real time analytical information sharing, including data visualizations and dashboards.
- Develop and implement a mechanism for M&E of timely data analysis and reporting for prioritized hazards under surveillance at national and subnational levels.

Participation and contribution of other sectors to actions:

- 1, 2, 3, 4, 5
- Train animal and environmental sector stakeholders in analysis methods contributing to cross-sectoral risk assessment.



## 05 SUSTAINABLE CAPACITY

### Reinforce routine analysis and reporting for prioritized diseases under surveillance at national and subnational levels, implement complementary capacities at primary public health level and strengthen collaboration across all key dimensions:

- Establish or reinforce dedicated analytical teams at national, subnational and primary levels, to link sectors and contextualize epidemiological information across multiple disciplines.
- Reinforce analytical functions of common/interoperable electronic platforms and establish default automated analysis at all EWAR levels.
- Establish or reinforce advanced analytical and modelling capacities at the national level.
- Develop or reinforce guidelines, standards, norms and quality requirements, as well as regularly review and update training packages for analysis and risk assessment based on lessons learned.

Participation and contribution of other sectors to actions:

- 1, 2, 3, 4
- Routinely contribute, from multisectoral stakeholders, to joint analysis, risk assessment (both ad hoc and routine), reporting and the generation of recommendations.

### Tools:

- Defining Collaborative Surveillance: A core concept of the framework for strengthening the global architecture for health emergency preparedness, response, and resilience (HEPR). Geneva: World Health Organization; 2023 (<https://apps.who.int/iris/handle/10665/367927>).
- Early warning, alert and response (EWAR) in emergencies: an operational guide. Geneva: World Health Organization; 2023 (<https://www.who.int/publications/i/item/9789240063587>).
- Surveillance and information sharing operational tool: an operational tool of the tripartite zoonoses guide. Geneva: World Health Organization, Food and Agriculture Organization of the United Nations, and World Organisation for Animal Health; 2022 (<https://www.who.int/publications/i/item/9789240053250>).
- Strategic toolkit for assessing risks: a comprehensive toolkit for all-hazards health emergency risk assessment. Geneva: World Health Organization; 2021 (<https://www.who.int/publications/i/item/9789240036086>).
- A regional strategy for integrated disease surveillance: overcoming data fragmentation in the Eastern Mediterranean Region. Cairo: WHO Regional Office for the Eastern Mediterranean; 2021 (<https://apps.who.int/iris/handle/10665/352420>).

- Global Strategy on Comprehensive Vaccine-Preventable Disease Surveillance. Geneva: World Health Organization; 2020 ([https://www.who.int/publications/m/item/global-strategy-for-comprehensive-vaccine-preventable-disease-\(vpd\)-surveillance](https://www.who.int/publications/m/item/global-strategy-for-comprehensive-vaccine-preventable-disease-(vpd)-surveillance)).
- Technical Guidelines for Integrated Disease Surveillance and Response in the African Region. Brazzaville: WHO Regional Office for Africa; 2019 (<https://www.afro.who.int/publications/technical-guidelines-integrated-disease-surveillance-and-response-african-region-third>).
- Immunization Analysis and Insights. Vaccine preventable disease surveillance standards [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/teams/immunization-vaccines-and-biologicals/immunization-analysis-and-insights/surveillance-surveillance-for-vpds/vpd-surveillance-standards>).
- Terrestrial Animal Health Code. Paris: World Organisation for Animal Health; 2022 ([https://www.woah.org/en/what-we-do/standards/codes-and-manuals/terrestrial-code-online-access/?id=169&L=1&htmlfile=chapitre\\_vet\\_legislation.htm](https://www.woah.org/en/what-we-do/standards/codes-and-manuals/terrestrial-code-online-access/?id=169&L=1&htmlfile=chapitre_vet_legislation.htm)).
- Manual of diagnostic tests and vaccines for terrestrial animals. Twelfth edition 2023. Paris: World Organisation for Animal Health; 2023 (<https://www.woah.org/en/what-we-do/standards/codes-and-manuals/terrestrial-manual-online-access>).
- International Health Regulations (2005) Third edition. Geneva: World Health Organization; 2016 (<https://www.who.int/publications/item/9789241580496>).
- Communicable disease surveillance and response systems: a guide to planning. Geneva: World Health Organization; 2006 (<https://apps.who.int/iris/handle/10665/69330>).
- WHO Recommended Surveillance Standards. Geneva: World Health Organization; 1999 (<https://apps.who.int/iris/handle/10665/65517>).
- Simulation exercises [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/emergencies/operations/simulation-exercises>).
- WHO simulation exercise manual: a practical guide and tool for planning, conducting and evaluating simulation exercises for outbreaks and public health emergency preparedness and response. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254741>).
- Guidance for after action review (AAR). Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/311537>).
- Guidance for conducting a country COVID-19 intra-action review. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/333419>).

# 11

## Human resources

States Parties who invest in the development of competent and well-motivated health personnel at all levels of the health system put themselves in a stronger position to effectively implement the IHR. This involves deliberate and consistent planning, resourcing, management and evaluation to ensure the education and employment of a health workforce that is competent to prepare for, prevent, detect, assess, notify, report, respond to and recover from health emergencies.

The workforce includes, but is not limited to, public health specialists and related occupations (e.g. biomedical technicians, biostatisticians epidemiologists, laboratory scientists and technicians, etc.), the clinical professions (e.g. midwives, nurses, pharmacists, physicians, etc.) and others (e.g. social scientists, communications personnel, occupational health personnel, information technology (IT) specialists, etc.). There is a corresponding and overlapping workforce in the animal and environmental sectors (e.g. animal health professionals, environmental health personnel, veterinarians and para-veterinarians, etc.) that are essential for health security measures. The workforce also includes personnel from a wide group of other allied occupations beyond the health sector who contribute to addressing the determinants of health, such as personnel engaged in water and sanitation, food supply chains and road safety.

The pursuit of health security, universal health coverage and health-related development goals requires investment in national health system capacity, with a focus on primary health care and public health. National and subnational system capacity is dependent on an integrated, multisectoral and multidisciplinary workforce that can deliver all essential public health functions (EPHFs), including emergency preparedness and response. It is critical that countries develop multisectoral workforce strategies that are informed by mapping and measuring the occupations that contribute to EPHF delivery, as well as regular health labour market analyses to assess health worker capacity requirements for the delivery of routine services and the ability to readily mobilize (surge) health workers in the event of an emergency or disease outbreak, based on caseload weight and other defined measures.

**IMPACT:**

Prevention, detection and response activities (including health promotion, occupational health safety and security, and appropriate care of those affected) are conducted effectively and sustainably by a competent, coordinated, motivated and occupationally diverse multisectoral health workforce.

**MONITORING AND EVALUATION:**

(1) The availability of a competent, supported and motivated health workforce to implement the IHR. (2) Existence of a corresponding workforce in the animal sector.

<p><b>BENCHMARK 11.1: An up-to-date multisectoral workforce strategy is in place</b></p> <p><b>OBJECTIVE: To develop and implement a valid (recognized by law or official government protocols) and up-to-date (no older than 5 years) workforce strategy for a functional multisectoral health workforce</b></p>	
<p><b>CAPACITY LEVEL</b></p>	
<p><b>01</b> NO CAPACITY</p>	<p><b>BENCHMARK ACTIONS</b></p> <ul style="list-style-type: none"> <li>● No multisectoral workforce strategy or governance and leadership mechanisms are in place.</li> </ul>
	<ul style="list-style-type: none"> <li>● Identify a national coordination working group (with ToRs) including all relevant stakeholders and sectors who can contribute to the development, strengthening and maintenance of a multisectoral workforce strategy.</li> <li>● Assess and document the country's current health workforce strategy, including the education, training and other capacity needs for strengthening of a multisectoral workforce.</li> <li>● Develop a draft or quasi-functional multisectoral workforce strategy.</li> <li>● Develop a One Health workforce strategy, if not already included, as part of the multisectoral workforce strategy.</li> <li>● Build capacity to develop or improve human resources for health policy and strategies that quantify health workforce needs, demands and supply under a variety of potential scenarios.</li> </ul>
<p><b>02</b> LIMITED CAPACITY</p>	<p>Participation and contribution of other sectors to actions: 1, 2, 3, 4</p> <ul style="list-style-type: none"> <li>● Develop a plan to fund and implement the multisectoral workforce strategy (animal and other relevant sectors) including donor and stakeholder contributions before and during a health emergency.</li> </ul>
	<ul style="list-style-type: none"> <li>● Develop protocols, SOPs and technical guidelines for regular review and updating of the multisectoral workforce strategy.</li> <li>● Conduct advocacy to relevant stakeholders, including ministries of health, finance, planning and administration/civil service, to implement the strategy.</li> <li>● Develop minimum standards for human health staffing levels, using methods such as the Workload Indicators of Staffing Need.</li> </ul>
<p><b>03</b> DEVELOPED CAPACITY</p>	

- Establish a national case for investment in human resources for health as a vital component of the Sustainable Development Goals, universal health coverage, health security and universal access to healthcare.
- Develop a framework to promote the social, legal and economic protection and rights of health and care workers in health emergencies including their occupational safety.
- Create appropriate job classifications and descriptions for health workers at all levels of relevant ministries, with clear career progression.

Participation and contribution of other sectors to actions:

1, 2, 4, 5, 6

- Develop minimum standards for the staffing levels of personnel addressing One Health issues.
- Form a governance and leadership body (with ToRs, embedded within a competent national structure) in charge of the management of human resources for health emergencies, bringing together government decision-makers, leaders in the health ministry and other health related ministries and community leaders.

## 04 DEMONSTRATED CAPACITY

- Monitor and evaluate the implementation of the multisectoral workforce strategy (including financing and operations) to track progress and barriers and document annual reports.
- Allocate a sustained domestic budget to ensure implementation of the multisectoral workforce strategy.
- Document and disseminate annual reports of the completed and implemented multisectoral workforce strategic plan.
- Develop a strategic framework to nationally prioritize resources and investments in workforce development to support One Health activities.
- Map and align investments in human resources for health with the current and future needs of the population and health systems.
- Distribute health and care workers to enable maximum improvements in health outcomes, social welfare, employment creation and economic growth.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5

## 05 SUSTAINABLE CAPACITY

- Adopt, review and revise the multisectoral workforce strategy regularly .
- Incorporate appropriate incentive packages and strategies to attract, train and retain competent personnel to meet national and subnational needs within the multisectoral workforce strategy.
- Allocate funding for regular and fair payment of the health workforce at the national and subnational levels.
- Establish national health workforce registries of competent and practicing personnel and collect key performance indicators.

Participation and contribution of other sectors to actions:

1, 2, 3

<sup>63</sup> Based on M&E results, latest scientific evidence and aligned with current policy guidance from WHO, including details on the workforce sustainability, staffing and incentive models, personnel recruitment, development/training and retention mechanisms, planning and monitoring of human resources, and implementation of a career progression ladder.



<b>BENCHMARK 11.2: Human resources are available to effectively implement IHR</b> <b>OBJECTIVE: To develop a health workforce that is available and competent to prevent, detect, assess, notify, report and respond to health emergencies of domestic and international concern and health service provision (such as epidemic preparedness and control) at all levels of the health system to effectively implement IHR.</b>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● The country has negligible human resources capacity in relevant sectors required to prevent, detect, assess, notify, report and respond to health emergencies including epidemic preparedness and control.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Identify a responsible unit and advisory committee for the development of human resource capacity to meet IHR capacity needs.</li> <li>● Conduct engagement meetings with relevant sectors to expand the multisectoral health workforce strategy to include IHR capacity needs.</li> <li>● Identify the needs, as well as current availability and distribution, of human resources for health capacities, including the workforce for IHR implementation.</li> <li>● Actively engage international organisations (IOs)/NGOs/civil society organized associate health worker groups (such as community first aid responders and Red Cross/Crescent volunteers).</li> <li>● Establish or strengthen national rapid response teams, ensuring they are multidisciplinary and multilevel.</li> </ul> <p>Participation and contribution of other sectors to actions:</p> <p>1, 2, 3, 4, 5</p> <ul style="list-style-type: none"> <li>● Identify the human resources needs that are required to support preparedness and response.</li> <li>● Identify licensed professionals with veterinary or paraveterinary skills to incorporate into the national rapid response teams.</li> </ul>

## 03 DEVELOPED CAPACITY

- Monitor policies and plans to increase the multisectoral animal and human health workforce and promote the recruitment and retention of qualified multidisciplinary staff.
- Establish a database of human resources in relevant sectors and levels of the public health system that can provide multidisciplinary health personnel during health emergencies with SOPs for updating and maintenance.
- Initiate annual reporting of the total active stock of health and care workers in the national health workforce accounts.
- Understand the size and profile of the workforce that contributes to the delivery of essential public health functions (EPHFs) by conducting mapping and measurement of occupations at the national and subnational levels.
- Develop mechanisms to facilitate the rapid deployment of local and foreign health and care workers during health emergencies (including workforce from the Global Strategy Preparedness Network (GSPN) and Global Outbreak Alert and Response Network (GOARN)).
- Establish ToRs and job descriptions for subnational level (provincial, district) rapid response teams and public health officers in charge of outbreak preparedness and response.
- Develop and implement capacity-building packages and plans including basic training for community health workers and volunteers, civil societies and community based organizations (CBOs) on prevention, early detection, preparedness, readiness and response to health emergencies at community and local levels.
- Establish a transparent process to select decision-makers and leaders who will be engaged in stewardship activities for effective management of human resources for health emergencies.

Participation and contribution of other sectors to actions:

1, 2, 4, 5, 6, 7, 8

- Recruit licensed professionals with veterinary or paraveterinary skills.
- Mobilize relevant workforces to increase the multisectoral workforce for IHR implementation.
- Provide information to the database of in-country multidisciplinary subject matter experts from relevant sectors.
- Provide relevant workforce for deployment during health emergencies.

## 04 DEMONSTRATED CAPACITY

- Use the data obtained from mapping and measurement of occupations to identify gaps in the national workforce capacity, conduct evidence-based planning and policy making and create projections for future needs.
- Mobilize resources to ensure each local level has the needed capacity for epidemiology, case management, laboratory services, One Health and other specialties.

- Develop and implement guidance and procedures for health and care workers (including community health workers and health volunteers) to enable them to better contribute to emergency management activities including prevention, detection, assessment, notification and response.
- Monitor and address public health workforce preparedness needs (quantity, quality) continuously at the national and subnational levels.

Participation and contribution of other sectors to actions:

1, 2, 4

- Provide resources at local levels to ensure One Health workforce capacity as needed.
- Empower strategic leaders of national public health agencies and/or equivalent to utilize communication channels with direct access to high level decision-makers in government relevant to human resources for health.

## 05 SUSTAINABLE CAPACITY

- Conduct annual data collection on the workforce which contributes to the delivery of EPHFs and progressively incorporate this reporting into the national health information systems and national health workforce accounts.
- Use this data to update and inform the national multisectoral workforce strategy annually (Benchmark 11.1).
- Conduct periodic health labour market analyses to understand key policy questions and devise strategies to address labour market gaps.
- Review national preparedness and response plans as well as legal and regulatory frameworks and establish protocols, SOPs, technical guidelines and toolkits to send and receive multidisciplinary health personnel during health emergencies.
- Review, evaluate and update policies or procedures for sustainable appropriate human resources in all relevant sectors according to IHR provisions.
- Establish a sustainable mechanism to ensure the availability of health and care workers to cover IHR needs in routine circumstances and during health emergencies, at national and subnational levels.
- Participate in regional/ international initiatives to support health emergency leadership coordination for human resources for health across countries by relevant sectors.

Participation and contribution of other sectors to actions:

1, 2, 4, 5, 6, 7

- Review, evaluate and update policies and procedures for sustainable appropriate human resources in relevant sectors according to the IHR provisions.

<b>BENCHMARK 11.3: Fit for purpose, competency-based education programmes are available for multisectoral workforce</b> <b>OBJECTIVE: To develop functioning competency-based education programmes including workplace-based learning and in-service programmes aligned with the multisectoral workforce strategy at all levels</b>	
CAPACITY LEVEL	BENCHMARK ACTIONS
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● No formal multisectoral competency-based training programme(s) is (are) in place or efforts are ad hoc.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Map the required workforce training needs for the different EPHFs and occupational groups aligning with the multisectoral health workforce strategy.</li> <li>● Identify and document existing preservice and in-service training programmes, including educational outcomes, specific to different health workforce occupational groups.</li> <li>● Identify and document all trainings related to contingency planning, management of emergencies, RCCE and joint exercises for multidisciplinary teams.</li> <li>● Identify and document the quality of existing training programmes and educational provisions, including accreditation and quality standards where known.</li> <li>● Publish a national list of competency-based training programmes leading to licensing or certification available in the country including national training institutes, professional bodies, schools of public health, nursing, midwifery, veterinary, medical colleges and universities that provide continuing professional education (CPE).</li> <li>● Map relevant public health multidisciplinary workforce curricula, with universities and partners, for all IHR human resource requirements (such as field epidemiology training programme curricula, materials, mentors, evaluation procedures and accreditation).</li> <li>● Develop competency-based training programmes to address the training needs at the national and subnational levels, including transitions to practice with supportive supervision as a pathway, for example.</li> <li>● Develop a mechanism to track training outcomes including the competence of learners, absorption and retention in the labour market.</li> </ul>

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8

- Map required workforce competencies in relevant sectors to align with the multisectoral health workforce strategy and identify training needs for their workforce/cadres.
- Identify and document training programmes, curricula and educational programmes related to contingency planning, management of emergencies, RCCE and joint exercises for multidisciplinary teams.
- Contribute to the development of competency-based training programmes for One Health.
- Establish competency-based standards for the workforce in each relevant sector to guide training.
- Operationalize competency-based education programmes that address identified training needs, including content on surveillance, outbreak preparedness and response.
- Develop and implement in-service competency-based training on surveillance, outbreak preparedness and response for specific occupational groups at the national level, at minimum.
- Conduct at least one level of a field epidemiology training programme (FETP) (basic, intermediate or advanced) or comparable applied epidemiology training programme.
- Organize trainings for managers and leaders to improve management and leadership skills in the workplace.
- Define rules and incentives to facilitate and ensure the participation of all health workers in relevant in-service training programmes.

## 03 DEVELOPED CAPACITY

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5

- Participate in competency-based education, trainings and programmes where relevant to the sector.
- Conduct at least one level of a field epidemiology training programme for veterinarians (FETPV) or comparable training programme including for other relevant One Health workforce occupations.
- Develop trainings for the legal workforce on public health law including public health emergency legal preparedness at the national level.

## 04 DEMONSTRATED CAPACITY

- Implement short competency-based trainings on surveillance, outbreak preparedness, response, incident command system and RCCE for specific occupations at the national and subnational levels.
- Develop measures to assess and monitor the implementation of in-service training programmes that are aligned with the country's training strategy.
- Conduct at least two levels of FETP (basic, intermediate and/or advanced) or comparable applied epidemiology training programme(s) in the country, or in another country through an existing agreement.
- Explore and implement measures to organize and finance advanced trainings and continued education programmes in public health, including epidemiology, laboratory, animal and environmental health.

Participation and contribution of other sectors to actions:

1, 2, 3, 4

- Organize, at the national level at minimum, in-service joint-training programmes with the health sector on surveillance for professionals from relevant sectors, to help them better interact with health emergency experts.
- Conduct at least two levels of FETPV or comparable training programme including for other relevant One Health workforce occupations in the country or in another country through an existing agreement.

## 05 SUSTAINABLE CAPACITY

- Build mechanisms that ensure strict adherence to nationally or internationally recognized standards for competency-based training programmes where applicable.
- Continue and expand CPE trainings and retention programmes for specialized health personnel involved in IHR implementation in difficult to access areas.
- Expand current public health and FETP to include refresher courses alongside induction programmes for field epidemiologists, regular in-service programmes and continuing professional development programmes.
- Mobilize resources to ensure a trained workforce for all IHR relevant emergencies/hazards.
- Document and share country experiences on competency-based training, programmes and education for the health workforce.
- Lead or participate in peer-to-peer initiatives to strengthen capacities globally.

Participation and contribution of other sectors to actions:

1, 3, 4, 6

- Document and share experiences on competency-based trainings, programmes and education for the workforce.

<b>BENCHMARK 11.4: Multisectoral workforce surge strategy for health emergencies is well established and functional</b> <b>OBJECTIVE: To develop and implement a valid (recognized by law or official government protocols) an up-to-date (no older than 5 years) workforce surge strategy for health emergencies</b>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● The country does not have a national multisectoral workforce surge strategic plan for health emergencies, or is still under development.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Initiate development of a multisectoral workforce surge strategic plan by the national coordination working group for multisectoral workforce strategy to staff, roster, prepare and train the workforce at the national level.</li> <li>● Conduct a situational analysis on existing policies/plans and methods for multisectoral workforce surge during health emergencies and identify gaps.</li> <li>● Identify relevant agreements and/or MOUs needed between different health programmes to ensure a cohesive multisectoral surge strategy for large scale activation.</li> <li>● Conduct a gap analysis of surge capacity and training needs required in health and relevant sectors for health emergencies.</li> <li>● Initiate plans to disseminate the multisectoral workforce surge strategic plan for health emergencies to all relevant staff and stakeholders.</li> </ul> <p>Participation and contribution of other sectors to actions: 1, 2, 3, 4, 5</p> <ul style="list-style-type: none"> <li>● Identify relevant agreements and/or MoUs needed between relevant sectors to ensure a cohesive multisectoral surge strategy for large scale activation.</li> </ul>



## 03 DEVELOPED CAPACITY

- Implement the multisectoral workforce surge strategic plan for health emergencies at national level.
- Develop or update policy for surge staffing for health emergency response for staff welfare, overtime and insurance measures.
- Develop training packages to orient and build the capacity of the multisectoral surge workforce.
- Develop and maintain a network of trained multisectoral surge teams at national level.
- Document and implement the procedures for predeployment, deployment and postdeployment of the multisectoral surge workforce at national level.
- Develop ToRs for all relevant units and departments based on the multisectoral workforce surge strategic plan at all levels.
- Develop and implement rosters for surge workforce in the health sector at national level.
- Conduct SimEx/AAR/IAR (as relevant) to review the functionality of the multisectoral surge workforce strategic plan.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 8

- Develop rosters for surge workforce from relevant sectors for health emergencies.
- Identify training needs for surge workforce in relevant sectors health emergencies.
- Establish a mechanism for the workforce of relevant sectors to participate in multisectoral surge teams at national level for health emergencies.

## 04 DEMONSTRATED CAPACITY

- Implement a multisectoral surge workforce strategic plan for health emergencies at all levels.
- Implement training packages and conduct training in advance of health emergencies for the multisectoral surge workforce at all levels.
- Allocate a budget for welfare, overtime, insurance and transport facilities of surge workforce.
- Develop and implement rosters for surge workforce in the health sector at subnational level.
- Use data driven planning tools to inform and revise surge workforce requirements.
- Develop and implement methods to prioritize the mental wellbeing of the multisectoral surge workforce during and after health emergencies.
- Establish capacity to send and receive multidisciplinary personnel within the country (shifting of resources), including workforce from government and nongovernmental partners, as applicable.

<h2 style="color: white; text-align: center;">05</h2> <h3 style="color: white; text-align: center;">SUSTAINABLE CAPACITY</h3>	<p>Participation and contribution of other sectors to actions: 1, 2, 3, 5, 6, 7</p> <ul style="list-style-type: none"> <li>● Establish a mechanism for the workforce of relevant sectors to participate in multisectoral surge teams at subnational level for health emergencies.</li> </ul>
	<ul style="list-style-type: none"> <li>● Review and update the multisectoral surge workforce strategic plan at all levels, including incorporating the results from M&amp;E.</li> <li>● Evaluate and update training packages and rosters of multisectoral surge workforce.</li> <li>● Document best practices and lessons learned from the implementation of the multisectoral workforce surge strategic plan.</li> </ul>
	<p>Participation and contribution of other sectors to actions: 1, 2, 3</p> <ul style="list-style-type: none"> <li>● Regularly participate in the review and updating of the multisectoral surge workforce strategic plan at all levels</li> <li>● Sustain participation of the workforce from relevant sectors in multisectoral surge teams at all level for health emergencies.</li> </ul>

### Tools:

- WHO Global Code of Practice on the International Recruitment of Health Personnel. Geneva: World Health Organization; 2010 (<https://www.who.int/publications/i/item/wha68.32>).
- Workload Indicators of Staffing Need. Geneva: World Health Organization; 2010 (<https://www.who.int/publications/i/item/9789241500197>).
- Executive Board 128.R9. Health workforce strengthening. In: One Hundred and Twenty-Eighth Executive Board Session, Agenda Item 4.5. Geneva: World Health Organization; 2011 (<https://www.who.int/publications/i/item/9789241500197>).
- Global Strategy on human resources for health: Workforce 2030. Geneva: World Health Organization; 2020 (<https://www.who.int/publications/i/item/9789241511131>).
- COVID-19: Operational guidance for maintaining essential health services during an outbreak: Interim guidance, 25 March 2020. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/331561>).
- FETP Accreditation and Quality Improvement [website]. Training Programs in Epidemiology and Public Health Interventions Network. United States of America: 2023 (<https://www.tephin.net.org/what-we-do/fetp-accreditation-and-quality-improvement>).

- Field Epidemiology Training Program (FETP) [website]. United States of America: Centers for Disease Control and Prevention; 2023 (<https://www.cdc.gov/globalhealth/healthprotection/fetp/index.htm>).
- Veterinary and Veterinary Paraprofessional Education [website]. World Organisation for Animal Health; 2023 (<https://www.woah.org/en/what-we-offer/improving-veterinary-services/pvs-pathway/veterinary-and-veterinary-paraprofessional-education/>).
- Health workforce policy and management in the context of the COVID-19 pandemic response. WHO interim guidance. 3 December 2020. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/337333>).
- National workforce capacity to implement the essential public health functions including a focus on emergency preparedness and response: roadmap for aligning WHO and partner contributions. Geneva: World Health Organization; 2022 (<https://apps.who.int/iris/handle/10665/354384>).
- National workforce capacity to implement the essential public health functions including a focus on emergency preparedness and response: Action plan (2022 – 2024) for aligning WHO and partner contributions. Geneva: World Health Organization; 2022 (<https://apps.who.int/iris/handle/10665/363519>).
- Strengthening the health system response to COVID-19 – Surge planning tools [website]. Copenhagen: WHO Regional Office for Europe; 2023 (<https://www.who.int/europe/tools-and-toolkits/strengthening-the-health-system-response-to-covid-19/surge-planning-tools>).
- Working for Health 2022-2030 Action Plan: protection and performance. Geneva: World Health Organization; 2023 (<https://www.who.int/publications/item/9789240063402>).
- McQuide PA, Finnegan A, Terry KA, Brown A, Toure CO, Tessougue J, et al. Applying WHO COVID-19 workforce estimate tools remotely in an African context: a case report from Mali and Kenya. Hum Resour Health. 2022;19(Suppl 1):111. doi:10.1186/s12960-021-00653-5.
- Health labour market analysis guidebook. Geneva: World Health Organization; 2021 (<https://www.who.int/publications/i/item/9789240035546>).
- National health workforce accounts: a handbook. Second edition. Geneva: World Health Organization; 2023 (Forthcoming).
- Simulation exercises [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/emergencies/operations/simulation-exercises>).
- WHO simulation exercise manual: a practical guide and tool for planning, conducting and evaluating simulation exercises for outbreaks and public health emergency preparedness and response. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254741>).
- Guidance for after action review (AAR). Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/311537>).
- Guidance for conducting a country COVID-19 intra-action review. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/333419>).

# 12

## Health emergency management

This capacity focuses on management of health emergencies for enabling countries to be prepared and operationally ready for response to any health event, including emergencies, as per the all-hazard requirement of IHR. Ensuring risk-based plans for emergency preparedness, readiness and response, robust emergency management structures and mobilization of resources during an emergency is critical for a timely response to health emergencies.



### IMPACT:

Multisectoral actors at national, subnational and local health response levels are well coordinated and have a common understanding of the priority risks and are ready to implement timely, effective and efficient emergency response operations for outbreaks and other emergencies. Countries have the necessary legal and regulatory processes to allow for rapid national or cross-border deployment and receipt of public health, medical personnel and logistics and supplies during emergencies.



### MONITORING AND EVALUATION:

(1) Existence of national strategic multihazard emergency assessments (risk profiles) and resource mapping. (2) Existence of emergency readiness assessments. (3) Development of national health emergency operations centre plans and procedures. (4) Establishment of an emergency response coordination mechanism or incident management system. (5) Evidence of at least one response to a health emergency within the previous year that demonstrates that the country sent or received medical countermeasures and personnel according to written national or international protocols. (6) Existence of an emergency logistic and supply chain management system/mechanism. (7) Existence of policies and procedures for research, development and innovation for emergency preparedness and response.

<p><b>BENCHMARK 12A.1: Effective risk profiling, readiness assessment and rapid risk assessment (RRA) processes are in place and strongly linked to health emergency and disaster management plans and structures</b></p> <p><b>OBJECTIVE: To develop capacities to conduct regular strategic (or equivalent) risk profiling, readiness assessment and RRAs to determine risks to be prioritized for health emergency management and support decision-makers during emergencies</b></p>	
<p><b>CAPACITY LEVEL</b></p>	<p><b>BENCHMARK ACTIONS</b></p>
<p><b>01</b> NO CAPACITY</p>	<ul style="list-style-type: none"> <li>● National all hazards risk profile not available based on a multihazard risk assessment or has not been updated in the past five years and there is no formal mechanism for the readiness assessment for potential health emergencies.</li> </ul>
<p><b>02</b> LIMITED CAPACITY</p>	<p><b>Risk profiling</b></p> <ul style="list-style-type: none"> <li>● Designate a national authority to coordinate the development of a multihazard risk profile (dedicated unit/department).</li> <li>● Conduct contextual analysis to ensure that relevant factors (cultural, societal, economic, etc.) are taken into consideration during the risk profiling development process.</li> <li>● Assess existing policies, legislation and legal basis, ethical rules, norms and standards to conduct risk assessments in nonemergency and emergency periods.</li> <li>● Develop a national risk profile, using a standardized approach with relevant focal points across health and relevant sectors.</li> <li>● Share available/updated risk profile with multisectoral stakeholders to inform IHR-related planning and actions including readiness and RRAs.</li> </ul> <p><b>Readiness assessment</b></p> <ul style="list-style-type: none"> <li>● Designate a national authority to coordinate a readiness assessment and identify priority anticipatory actions for high priority and imminent risks.</li> <li>● Conduct a readiness assessment of operational capabilities at the national level using a validated readiness checklist<sup>64</sup> for a real or simulated high priority and imminent risk(s) and identify prioritized anticipatory actions to fill gaps.</li> <li>● Share available/updated readiness assessment and prioritized anticipatory actions with multisectoral stakeholders to inform IHR-related planning and actions.</li> </ul>

<sup>64</sup> Available from <https://partnersplatform.who.int/en/>

## RRA

- Conduct RRA for major acute public health events.
- Commence training of public health experts to conduct RRAs.
- Form a national working group (with ToRs) to lead and support the RRA process at national and subnational levels.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

- Identify and involve multisectoral stakeholders and trusted community leaders in risk profiling exercise at national level.
- Review available data, risk and capacity assessments across sectors to inform an all hazard risk assessment.

## Risk profiling

- Form/reconvene a risk assessment implementation team to organize, prepare and conduct risk profiling exercises at the national level on a regular basis (i.e. every two years).
- Train multisectoral risk assessment facilitators to conduct risk profiling exercises, including refresher sessions at the national level, and maintain a risk assessment facilitator roster.
- Define data consolidation process to make use of multiple sources of information/analysis from different sectors, inclusive of all hazards (i.e. natural, human-induced and environmental hazards) to inform the risk profile and anticipatory actions for priority risks.
- Develop or update the national risk profile and share updated risk profile and prioritized risks regularly with relevant multisectoral stakeholders to inform preparedness and readiness actions.

## Readiness assessment

- Form/reconvene a readiness multisectoral team to coordinate and conduct readiness assessments at the national level.
- Conduct or update the readiness assessment of operational readiness capabilities using a WHO recommended readiness checklist for a real or simulated high priority and imminent risk(s) and identify prioritized anticipatory actions to fill gaps on a regular basis.
- Develop/update and test the national operational contingency plans or equivalent for high priority and imminent risks based on readiness assessment(s) and prioritized readiness anticipatory actions.
- Integrate the risk profile and prioritized readiness anticipatory actions into relevant national emergency management mechanism(s), plans, strategies and frameworks.

# 03

## DEVELOPED CAPACITY



### Rapid risk assessment

- Conduct RRAs systematically after the detection of an event with provision of updates to the assessment over time.
- Follow a systematic and stepwise methodology for the RRA process with SOPs after the detection of threats or events that can lead to health emergencies. This includes assessment of hazard, exposure, context and level of impact of the negative consequences of the event and their respective likelihood.
- Share RRA output with relevant stakeholders and partners.
- Use the output of the RRA to support the decision-making process.
- Train a multidisciplinary team that includes health, animal and environment sectors to conduct RRA.
- Engage relevant departments of the health ministry and other relevant governmental ministries and agencies in the development of the initial RRAs and ongoing updates.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14

- Develop and/or use orientation packages for multisectoral experts participating in risk profiling exercises.
- Raise awareness about the importance of risk assessments and application in relevant sectors.
- Involvement from relevant ministries, governmental agencies and nonhealth partners/stakeholders in the risk assessment process, operationalization of readiness tools (including checklists) and capacity-building planning, including (but not limited to): various ministries, disaster risk management authority, centralizing authority (such as the prime minister/ president's office) and multisectoral stakeholders and partners.

### Risk profiling

- Designate an authority to coordinate the development of a multihazard risk profile at the subnational level(s) (dedicated unit/department).
- Develop or update existing policies, legislation and legal basis, ethical rules, norms and standards to conduct risk assessments in nonemergency and emergency periods.
- Define how risk profile and rapid risk assessment results will be applied to national and subnational planning mechanisms, operational decision-making, partner engagement and capacity-building and apply as appropriate.
- Reinforce capacity to conduct multihazard risk profiling exercise(s) that can support national and subnational level profiling exercises.
- Allocate funding to develop and maintain risk profiles at the national and subnational levels.

## 04 DEMONSTRATED CAPACITY



### **Readiness assessment**

- Designate an authority to coordinate readiness assessments and the development of operational contingency plan(s) at the subnational level(s).
- Develop/review/update and test hazard specific national and subnational operational contingency plans or equivalent for high priority and imminent risks based on readiness assessment(s) and prioritized readiness anticipatory actions.
- Establish rapid deployment mechanisms for the release of available contingency resources (human, financial, technical) for prioritized readiness anticipatory actions on a no regrets basis.
- Apply hazard specific preparedness and readiness tools based on the risk profile and prioritized risks at the national and subnational levels to inform actions.

### **RRA**

- Establish or designate a RRA division in the health ministry to coordinate the management of risk assessment in all programme divisions and provide appropriate resources for supporting risk assessment activities (staff, funds, material, regular trainings).
- Use information from the most recent strategic risk assessment performed at national and/or subnational levels for RRA to contextualize acute events.
- Conduct SimEx for RRA to identify gaps/best practices and update plan and risk assessment mechanisms accordingly.
- Include RRA trainings in the curricula of postgraduate studies in public health, health administration, emergency medicine, disaster management and other relevant fields.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13

- Establish the process for multisectoral partners to cross share relevant risk data, information and mapping to inform risk profile development/maintenance.

### **RRA**

- Establish cooperation agreements between partners, community representatives and the RRA division to ensure whole-of-society, multisectoral/multidisciplinary risk assessments are conducted at national and subnational levels.

## Risk profiling

- Update risk profiles at the national and subnational levels on an annual basis (or as required based on emerging threats).
- Incorporate research and risk modelling from academic institutions, scientific data and modelling into the national and subnational risk profile through a well defined process with a special focus on emerging threats.

## Readiness assessment

- Apply hazard specific readiness tools based on high priority and imminent risks to assess and scale up readiness of the health sector to respond to health emergencies.
- Regularly update health emergency strategy, contingency plans, legislation, risk informed capacity-building plans and other relevant documents based on risk profiles and readiness assessments at the national and subnational levels.
- Establish or designate national and subnational mechanisms or processes to review the application of the risk profile as related to national and subnational policies, contingency and capacity planning, readiness assessments and risk management are fit for purpose on an annual basis (or as required based on emerging threats).
- Share country experiences, lessons learned and innovations on risk profiling and application of readiness tools within a community of practice.

## RRA

- Use conclusions and recommendations from RRAs to develop/update contingency or response plans during health emergencies as well as to prioritise public health programmes and capacity-building planning.
- Develop and update RRA methods tailored to the country context and based on M&E results.
- Document country experiences in risk assessment (strategic and RRA), share best practices and engage the country in peer-to-peer learning programmes at subnational, national level and international levels.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8, 9

- Coordinate and collaborate across stakeholders to ensure that the ongoing exchange of data, information, intelligence and joint surveillance activities are in place to support development and periodic updates of risk profile at the national and subnational levels.
- Contribute to the clear process for routine risk monitoring and updating the risk profile at national and subnational levels from relevant sectors, based on updated information and changes to the risk situation.

<b>BENCHMARK 12A.2: Public health emergency operations centre (PHEOC) capacities, procedures and plans are in place</b>	
<b>OBJECTIVE: Develop PHEOC capacities to enable countries to respond in a timely manner to all hazard emergencies and disasters</b>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> NO CAPACITY	<ul style="list-style-type: none"> <li>● A PHEOC has not been identified at the national level and no PHEOC handbook is in place.</li> </ul>
<b>02</b> LIMITED CAPACITY	<ul style="list-style-type: none"> <li>● Conduct high level advocacy on the importance of creating functional PHEOCs with heads of state, ministries and agencies.</li> <li>● Conduct a baseline assessment of emergency operations capacities and gaps including infrastructure (facility, communication technology equipment, internet, software, office supplies and power), information systems, workforce, legislation, policies and plans.</li> <li>● Form a steering committee or other management structure to oversee the implementation and strengthening of PHEOC and a policy group to provide strategic direction and allocation of resources.</li> <li>● Incorporate the concept of operations for the entire emergency response system, including PHEOC, within the national emergency response plan.</li> <li>● Develop a PHEOC implementation plan, including resource mobilization plan, to meet the minimum requirements of a functioning PHEOC.</li> <li>● Complete a comprehensive mapping of existing legal mandates on health emergency management systems and PHEOCs.</li> <li>● Draft a legal framework for the PHEOC to coordinate emergency operations and advocate for its enactment in the presence of leadership from the health ministry and relevant agencies.</li> <li>● Identify/establish a designated facility for the PHEOC with limited capacities (e.g. space, information communication technology infrastructure, information management, human resources with at least one designated core staff member, access to required data, etc.) to perform the coordination of emergency operations.</li> <li>● Develop a PHEOC handbook and other plans and procedures (multihazard response plan, hazard specific plans for priority risks, business continuity plan, necessary SOPs, etc.) that include PHEOC activation and scaled level of response and resource requirements at the national and subnational levels.</li> <li>● Develop the national incident management system/response coordination structure</li> </ul>

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8, 9, 10

- Identify and involve multisectoral stakeholders and trusted community leaders in risk profiling exercise at national level.
- Review available data, risk and capacity assessments across sectors to inform an all hazard risk assessment.

## 03 DEVELOPED CAPACITY

- Enact the legal framework for operationalization of the PHEOC.
- Implement and validate health emergency preparedness and response plans, PHEOC handbook and SOPs in routine and emergency operations.
- Assign permanent staff for core PHEOC functions (operations and management in preparedness, response and recovery phases).
- Identify staff to conduct core incident management system (IMS) functions within the national PHEOC.
- Develop standardized forms, templates and other tools for data/information management, task management, reporting, briefing and record keeping.
- Determine data and information requirements (essential elements and critical requirements) to inform decision-making and identify critical sources of information such as epidemic intelligence, laboratory system, risk assessments and resources etc.
- Develop and implement MoUs and SOPs to establish communication, coordination, information management and sharing of mechanisms between relevant stakeholders.
- Establish a PHEOC information system and an interoperability platform, linking the health information system, to capture and manage required information and exchange information between the various existing information systems and stakeholders.
- Develop funding mechanisms to build, equip and operate PHEOCs at the national level and to access additional funds in special circumstances.
- Develop a roster of subject matter experts and identify critical nonhealth sectors that would represent essential participation in PHEOC functioning during a health emergency.
- Develop and implement a training programme for national PHEOC staff (routine and surge staff) on IMS function, roles and PHEOC operations.
- Assess the need for creating and building an additional PHEOC at both the national and subnational levels and identify priority regions for PHEOC establishment based on specific needs.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

## 04 DEMONSTRATED CAPACITY

- Review and update the national incident management system/response coordination structure.
- Align emergency operations centres (EOCs) existing in relevant sectors with the PHEOC and the national EOC for all hazards to ensure interoperability and harmonization of actions and interventions during health emergencies.
- Monitor, evaluate and improve the PHEOC facility, communication technology infrastructure, information management and sharing platforms, emergency policies, plans, PHEOC handbook and procedures.
- Identify/develop alternative/additional PHEOCs at the national level and establish PHEOCs at the subnational level (based on the risks and geographical need) with associated PHEOC handbooks.
- Mobilize and allocate sufficient and sustainable funds to build, equip, maintain and operate PHEOCs at the national (including alternative PHEOCs) and subnational levels.
- Develop and implement a tracking of decision-making procedures for the activation of a PHEOC.
- Activate the national PHEOC within 120 minutes of receiving an early warning or information of an emergency requiring PHEOC activation.
- Conduct SimEx/AAR/IAR (as relevant).
- Develop and implement a training programme for PHEOC staff (routine and surge staff) on IMS function, roles and PHEOC operations at subnational levels and allocate dedicated resources.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8, 9

## 05 SUSTAINABLE CAPACITY

- Regularly review and communicate with stakeholders involved in health emergency management and PHEOC activities including relevant sectors.
- Maintain and regularly update the national database of trained and skilled PHEOC and surge personnel to support preparedness and response coordination at all levels.
- Sustain resources for the implementation of PHEOCs and maintain a network of fully functional, funded PHEOCs and trained staff on a 24/7 basis.

- Test the activation, operation and deactivation of the PHEOC network which includes national, subnational or multisectoral PHEOCs, using real or simulated events and update PHEOC handbooks annually.
- Sustain a regular training and exercise programme to train PHEOC and surge personnel at all levels based on the need or gap analysis.
- Test, review and update PHEOC functions, plans, SOPs and trainings regularly at all levels, including for large scale and concurrent emergencies, based on lessons learned and ensure follow up on the implementation of recommendations from M&E activities.
- Participate in international initiatives including regional and global PHEOC exercises to support capacity-building for functioning PHEOCs.
- Share experiences on PHEOC management and engage the country in peer-to-peer learning programmes at the subnational, national and international levels.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8

<b>BENCHMARK 12A.3: A functional multisectoral all hazard health emergency response management system<sup>65</sup> is in place</b>	
<b>OBJECTIVE: To develop a management and coordination mechanism for timely emergency response to all hazard health emergencies and disasters</b>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● A formal emergency response coordination mechanism is not in place.</li> <li>● An IMS integrated with a national PHEOC or equivalent structure is not available or under development.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Establish a national health emergency coordination focal point that maintains regular contact with experts from human, animal (domestic animals and wildlife) and environmental health as well as other relevant sectors.</li> <li>● Identify and develop linkages with key potential informants and response partners for health emergency operations that can provide 24/7 coverage in all major health systems.</li> <li>● Establish capacity for the availability of IHR NFP and other responsible parties to receive information about potential health threats and to report a public health emergency of international concern as outlined in the IHR.</li> <li>● Develop a plan and SOPs for an IMS which is integrated with the national PHEOC or equivalent structure, including thresholds and levels of activation for the emergency response coordination mechanism, and develop SOPs for the coordination of key health sector actors (such as surveillance, health facilities, emergency medical teams, mental health departments) and other relevant sectors.</li> <li>● Involve health emergency coordination focal points in the development of NHPSPs to define the country's vision, policy directions and strategies for ensuring coordination mechanisms for emergency response.</li> </ul>
<b>03</b> <b>DEVELOPED CAPACITY</b>	<p>Participation and contribution of other sectors to actions: 1, 2, 3, 4, 5</p> <ul style="list-style-type: none"> <li>● Establish an IMS for managing emergency response at the national level, including participation of relevant sectors, and integrate with national PHEOC or equivalent structure.</li> <li>● Adapt the country's legal framework to facilitate the coordination of emergency response operations in relevant sectors at both national and subnational levels.</li> </ul>

<sup>65</sup> These include entities, such as points of contact, EOCs or response committees to coordinate health sector actors and resources in response to emergencies, and to coordinate health sector response with other sectors. Coordination mechanisms may apply IMSs to fulfil the coordination function.



- Identify the roles and responsibilities of multisectoral stakeholders actively involved in the IMS and emergency response.
- Establish and maintain a roster of emergency operations staff with defined roles and functions.
- Develop a training plan linked to other relevant trainings for emergency operations staff, including IMS, and implement at the national level, at a minimum.
- Develop advocacy material and training packages on coordination of emergency response for communities and all relevant stakeholders.
- Develop a strategy, standards of conduct, training and advocacy material to prevent and address misconduct during response operations including sexual exploitation and abuse of vulnerable population, staff harassment, etc.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7

## 04 DEMONSTRATED CAPACITY

- Establish a health sector emergency response coordination mechanism with participation from health and relevant sectors, linked to the national IMS and PHEOC or equivalent structure, with capacity to support the management of emergency responses at the subnational level.
- Train subnational level and local health sector staff on the emergency response coordination mechanism.
- Conduct SimEx/AAR/IAR (as relevant) with a focus on IMS, including coordination between national and subnational levels.
- Disseminate advocacy materials and training packages to raise awareness of communities and train or retrain relevant stakeholders on their role(s) and responsibilities during an emergency response.
- Make safety and security training mandatory for all staff before being deployed in emergency response operations.
- Develop an anonymous and secured platform for reporting misconduct during response operations including sexual exploitation and abuse of vulnerable population, staff harassment, etc. Make training and awareness raising campaigns to prevent and address misconduct during emergency operations mandatory for all multisectoral staff before being deployed during and emergency response.
- Develop a platform for mental health support of staff returning from emergency response operations.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7

## 05 SUSTAINABLE CAPACITY

- Establish and sustain routine and emergency communications, which are linked to the national IMS and PHEOC or equivalent structure, at national and subnational levels, with international coordination mechanisms through the focal points.
- Allocate sustainable funding for IMS activities at all levels.
- Evaluate, document and disseminate information on activations and, if done, include exercises to promote continuous improvement in communication and coordination.
- Review and adjust plans, SOPs, advocacy material and training packages for IMS and coordination of the emergency response based on lessons learned from SimEx/AAR/IAR (as relevant).
- Keep record and track data of security and safety incidents as well as all allegations of misconduct, conduct investigation and take subsequent actions accordingly across all relevant sectors.
- Share experiences of coordination mechanisms for emergency response and engage the country in peer-to-peer learning programmes at the subnational, national and international levels.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6

<b>BENCHMARK 12A.4: A system is in place for timely and effectively providing surge health personnel and teams during a health emergency</b>	
<b>OBJECTIVE: To develop a functional system for activating, sending, receiving and coordinating health personnel and teams during a health emergency</b>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● No national plan for health personnel deployment or team (sending and receiving) has been drafted, or is under development.</li> <li>● No plan for establishing national rapid response team (RRT)/emergency management team (EMT) has been drafted and no coordination mechanisms for RRTs/EMTs or health personnel deployment have been described.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Review national preparedness and response plans and legal and regulatory frameworks for preparing, sending, coordinating and receiving health personnel with key stakeholder involvement.</li> <li>● Review national laws and regulations for the licensing and registration of health personnel, including RRTs/EMTs.</li> <li>● Develop/update national plans, protocols, SOPs, technical guidelines and toolkits for preparing, mobilizing, sending, receiving and coordinating health personnel deployment and teams, and for sharing information as appropriate.</li> <li>● Conduct stakeholder mapping to determine baseline capacities/capabilities of relevant ministries and partner agencies for the deployment of EMTs and RRTs.</li> <li>● Appoint an EMT national focal point and request assistance in developing national EMTs as needed from multisectoral organizations and partner agencies.</li> <li>● Identify points of contact at ministries and/or relevant multisectoral organizations that can contribute to the deployment of health personnel and liaise with trained EMT teams across sectors, such as military forces, for collaboration and rapid deployment of health personnel during an emergency.</li> <li>● Develop SOPs and trainings for the procurement, storage, organization, transportation and distribution of personal protective equipment, medical and nonmedical supplies and equipment for health personnel.</li> <li>● Develop standardized plans for triage, IPC, clinical care and operational support during emergency incidents, considering emergency and nonemergency related clinical presentations (based on agreed EMT standards).</li> <li>● Develop tools for community engagement and education targeting acceptance of deployed health personnel.</li> </ul>
Participation and contribution of other sectors to actions: 1, 2, 3, 4, 5, 6, 7, 8, 9	

## 03 DEVELOPED CAPACITY

- Develop and implement the technical procedures and legal provisions required to adopt and execute the national plan on health personnel and team deployment, adopting a quality assurance approach.
- Conduct SimEx/AAR/IAR (as relevant) to test plans/SOPs/protocols which include sending, receiving and coordinating health personnel and teams, and for the creation of an EMT coordination cell and/or case management pillar in the national PHEOC.
- Establish a multisectoral expert group to advise government on the management and coordination of health personnel and teams during health emergencies at the national and subnational levels.
- Draft and regularly update the mapping of partner agencies to ensure ownership in human resources for health management coordination during health emergencies.
- Apply to the WHO EMT Initiative<sup>66</sup> for mentorship and verification as an internationally classified EMT.
- Define criteria (health and nonhealth) for the activation and deployment of health personnel and teams during a health emergency, at the national and subnational levels. Create a roster of national and local health experts that can be rapidly activated and deployed during health emergencies at the national and subnational levels.
- Develop and implement standardized training plans for emergency staff based on standardized competencies for RRTs and EMTs at the national level, with plans for rollout at subnational level.
- Include prompt processes for licensing and regulation to authorize full or partial practice of qualified foreign health workers deployed specifically for emergency assistance.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8

## 04 DEMONSTRATED CAPACITY

- Review the implementation plan of sending and receiving health personnel in at least one event response, or conduct a SimEx if no response has occurred in the past year.
- Establish, maintain and train an updated roster of multisectoral qualified personnel to be activated in a health emergency.
- Conduct regular trainings for emergency response personnel based on standardized competencies at all levels.
- Establish a system for accreditation of national EMTs and obtain external validation of national EMTs.
- Develop and implement an occupational safety strategy (including psychological support) for health personnel deployed during health emergencies at the national and subnational levels.

<sup>66</sup> <https://extranet.who.int/emt/>

## 05 SUSTAINABLE CAPACITY

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5

- Development of sector-specific external evaluation mechanisms for multisectoral teams and capacities.
- Update plans, SOPs, protocols and trainings based on findings from SimEx/AAR/IAR and identify improvements to regular health system operations resulting from personnel and team deployment during emergencies.
- Identify and partner with regional and international partners (such as GOARN or the EMT Network via the WHO EMT Secretariat) for mobilizing health personnel.
- Share experiences in the management of health personnel during health emergencies with subnational, national and international partners.
- Maintain sustainable sources of funding for maintaining national EMT coordination and deployment mechanisms.
- Achieve certification as international RRTs/EMTs from WHO to support national health personnel deployment in health emergencies.
- Routinely test and evaluate capacity for emergency deployment of health personnel (sending and receiving), including EMT coordination cells and/or case management pillar operations within the national PHEOC, and the provision of continuing education programmes to ensure deployment staff readiness.
- Play a mentoring role for other interested countries for RRT/EMT deployment whilst maintaining ethical standards including for the international hiring of health workers and participate in a twinning arrangement to support at least one country in their development of a national EMT.
- Support research programmes in service delivery and other areas related to the management and deployment of health personnel during health emergencies.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6

<b>BENCHMARK 12A.5: A system is in place for emergency logistics and supply chain management<sup>67</sup> during a health emergency</b> <b>OBJECTIVE: To develop a functional system for activating and coordinating emergency logistics and supply chain management during a health emergency</b>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● Emergency logistics and supply chain management system/mechanisms is under development and/or not able to provide adequate support for health emergencies</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Review national preparedness and response plans, legal and regulatory frameworks, and baseline capacity for procuring, stockpiling and deploying medical countermeasures, including sector roles and responsibilities, involving all key stakeholders.</li> <li>● Review national laws and regulations for the registration, procurement and use of medical devices, vaccines, drugs, biologicals and medical supplies from national and/or international sources during health emergencies.</li> <li>● Form a national expert group, bringing together all relevant experts, to advise decision-makers on how to strengthen capacity for management of medical countermeasures during a health emergency.</li> <li>● Draft a national plan to mobilize, receive, stockpile and deploy medical countermeasures, including SOPs for receiving donations of medical countermeasures.</li> <li>● Develop a legal framework and regulation to facilitate shipping and customs clearance of medical countermeasures during a health emergency.</li> <li>● Complete feasibility assessment for establishing a medical countermeasures procurement stockpile, including secure and functional facilities at all levels.</li> <li>● Draft a list of essential medical countermeasures based on the country risk profile (medical devices, vaccines, drugs, biologicals and medical supplies) for the management of high risk health emergencies at the national and subnational levels.</li> </ul>

<sup>67</sup> Emergency logistics and supply chain system and mechanism include the capacity to purchase, store and deliver essentials products and materials necessary for a response (emergency kits, protective equipment, diagnostics, medical consumables, therapeutics, drugs and biomedical equipment) wherever they may be required in adequate quantity and in a timely manner. It also gathers and organizes the material, capacities and processes allowing for a rapid deployment and implementation of the response including emergency medical infrastructures, transportations, emergency offices and telecommunications.

## 03 DEVELOPED CAPACITY

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7

- Identify countermeasures required for use across relevant sectors (PPE for animal culling, for example).
- Adopt and implement the national plan to mobilize, receive, stockpile and deploy medical countermeasures, including mapping resources within the country and with all relevant partners.
- Develop standardized protocols and plans for storage, deployment, logistical and administrative support at all levels.
- Establish regulatory pathways for the use of medical countermeasures including appropriate authorizations, clearances, ethical norms and permissions during investigations and responses.
- Create deployment protocols, SOPs, technical guidelines and toolkits including communication materials, trainings and educational information to inform staff, the community and stakeholders.
- Develop a procedure for accelerated market authorization for novel and innovative drugs and medical products during health emergencies.
- Develop a training plan for rapid logistics needs assessments, planning, management and distribution of stockpiles for health emergencies and train early responders in the appropriate use and management of medical countermeasures.
- Conduct SimEx/AAR/IAR (as relevant) to test the implementation plan.
- Implement measures for the management and distribution of stockpiles at the national level and develop tools for regular monitoring of quantity and quality control of the strategic stockpile of essential medical countermeasures at the national and subnational levels.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8

- Design and implement joint measures for effective supply chain management by relevant sectors during health emergencies.



## 04 DEMONSTRATED CAPACITY

- Review the implementation plan for sending, receiving, stockpiling and deploying medical countermeasures during at least one response or conduct a SimEx if no response has occurred in the past year.
- Develop and implement a strategy to ensure safe and secure access to medical countermeasures for the most vulnerable groups, including forcibly displaced people, low income people, people living in unsafe areas, etc.
- Develop SOPs and train a sufficient number of health workers for rational prescription and utilization of medical countermeasures to provide an appropriate response to health emergencies.
- Conduct regular monitoring and quality control missions of strategic stockpile of essential medical countermeasures at the national and subnational levels.
- Implement rapid needs assessments, planning, management and distribution of stockpiles for health emergencies at national and subnational levels.
- Complete trainings to support the management and distribution of stockpiles for health emergencies.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6

- Expand procurement of countermeasures to the animal sector in the country plans, procedures or legal provisions.

## 05 SUSTAINABLE CAPACITY

- Test the management of the strategic stockpile regularly and update plans and strengthen capacities accordingly.
- Develop and routinely apply criteria to document progress of sending and receiving medical countermeasures during a response.
- Routinely test and evaluate capacity of for emergency deployment of medical countermeasures and update plans accordingly.
- Develop a system for automatic replenishment of strategic stockpiles of essential medical countermeasures for health emergencies at the national and subnational levels.
- Establish partnerships with countries, regional and international partners that includes procurement, sharing and distribution of medical countermeasures.
- Share experience in activation and coordination of medical countermeasures during a health emergency and engage the country in peer-to-peer learning programme at the subnational, national and international levels.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6

<b>BENCHMARK 12A.6 Research, development<sup>68</sup> and innovation<sup>69</sup> (RD&amp;I) capacity for emergency management is in place</b> <b>OBJECTIVE: To develop and implement a RD&amp;I mechanism to generate evidence-based solutions for emergency preparedness and response through research and development and dissemination of findings</b>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● Research and development activities (operational and implementation), including approvals of research, are conducted on an ad hoc basis.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Establish a national multisectoral committee (with ToRs) with relevant stakeholders and sectors to contribute to the development, updating and implementation of a national RD&amp;I agenda for health emergencies based on the country risk profile and to coordinate dissemination of evidence<sup>70</sup>.</li> <li>● Develop a national strategy, action plan or framework to guide RD&amp;I for emergency preparedness and response including dissemination and advocacy strategy.</li> <li>● Map existing national entities (public and private) which provide funding for research and development.</li> <li>● Develop a national regulatory review process<sup>71</sup> for conducting RD&amp;I in country.</li> <li>● Assess capacities (including local networks of stakeholders in relevant sectors) to conduct RD&amp;I activities before, during and after health emergencies both at the national and subnational levels.</li> <li>● Map existing scientific evidence dissemination platforms.</li> </ul> <p>Participation and contribution of other sectors to actions: 1, 2, 3, 4, 5, 6</p> <ul style="list-style-type: none"> <li>● Identify focal points in all relevant organizations and sectors who can contribute to RD&amp;I on health emergency preparedness and response.</li> </ul>

<sup>68</sup> R&D are activities that focus on the innovation of new or improved knowledge, products and services through systematic and methodical work.

<sup>69</sup> Health innovation refers to the development of new or improved health policies, systems, products and technologies, services and delivery methods that improve people's health, with a special focus on the needs of vulnerable populations. <https://www.who.int/teams/digital-health-and-innovation/health-innovation-for-impact>

<sup>70</sup> The working group can be constituted by a national public health institute, health ministry and across relevant ministries, academia, research institutes, regional bodies or access to regional networks.

<sup>71</sup> Regulatory review refers to the approval, initiation and conduct of periodic review of biomedical research involving human subjects. The primary purpose of such review is to ensure the protection of the rights and welfare of the human subjects (Institute of Medicine (US) Roundtable on Research and Development of Drugs, Biologics, and Medical Devices; Davis JR, Nolan VP, Woodcock J, et al, editors. Assuring Data Quality and Validity in Clinical Trials for Regulatory Decision-Making: Workshop Report. Washington (DC): National Academies Press (US); 1999. FDA Regulatory Review. <https://www.ncbi.nlm.nih.gov/books/NBK224583/>.

## 03 DEVELOPED CAPACITY

- Implement a national RD&I strategy, action plan or framework which includes mechanisms and procedures for conducting RD&I.
- Secure sufficient funding, including from external sources if limited resources available from domestic funds, to support RD&I activities.
- Implement the national regulatory review process for conducting RD&I in country.
- Identify institutions, within and outside of the country, that support RD&I activities.
- Create in-country networks of stakeholders from relevant sectors who can contribute to RD&I activities before, during and after health emergencies.
- Develop or adapt RD&I orientation packages to train relevant staff on mechanisms and procedures to conduct research before, during and after health emergencies, based on a training needs assessment.
- Train relevant staff across sectors and organizations at the national level on mechanisms and procedures for efficient RD&I based on country context.
- Develop a platform or network for sharing and exchanging scientific information with relevant sectors during health emergencies at local, subnational, national and international levels<sup>72</sup>.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8

- Develop strategies for RD&I capacities in relevant sectors to conduct research on topics such as social science, anthropology, economics, politics, etc. before, during and after health emergencies.
- Share RD&I from relevant sectors, including human, animal health, environment, chemical and radiological to support coordinated RD&I efforts.

## 04 DEMONSTRATED CAPACITY

- Establish a designated, domestic and externally funded, RD&I division to coordinate the management of RD&I including health emergencies across all programme divisions with appropriate resources (staff, funds, material, facilities, etc.) and cooperation agreements with partners, donors and other countries to support multisectoral/multidisciplinary RD&I activities in the country.
- Develop a mechanism to support the fast tracking and expansion of research capacities during health emergencies and increase the frequency of activity during public health emergencies of international concern/novel emergencies to gather the latest evidence and communicate with decision-makers.

<sup>72</sup> To disseminate findings from RD&I widely among experts, decision-makers and communities and take into account potential sensitivity of innovation in local context (including social, cultural and political contexts).

- Increase collaboration and engagement between the research community and policy-makers, practitioners and stakeholders.
- Share documented research activities, evidence and outcomes with decision-makers to support policy, practice and guideline improvement.
- Expand training of relevant staff across sectors to subnational level and incorporate RD&I into undergraduate and postgraduate studies in relevant programmes.
- Evaluate RD&I mechanisms, procedures and utilization of findings in health emergencies within AARs/IARs, as relevant.
- Collect and record adverse events from all phases of RD&I from all sectors to evaluate and address incidents and preserve transparency and trust in RD&I initiatives.
- Identify and promote opportunities for international cooperation on RD&I related to health emergencies.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8

- Conduct cross-sectoral collaborative research on health emergencies with joint action to utilize evidence for preparedness and response and advocacy.

## 05 SUSTAINABLE CAPACITY

- Maintain sustainable funding for RD&I from both domestic and international sources.
- Review RD&I strategy and activities based on recent health emergency risk assessments/RD&I evaluations and update accordingly.
- Establish and maintain prearrangements and MoUs to facilitate public-private partnership for multisectoral/multidisciplinary RD&I during health emergencies.
- Review and update training packages and advocacy materials based on assessment and evaluation results.
- Engage the country in peer-to-peer learning programmes for RD&I at the subnational, national and international levels.
- Enact evidence-informed policy, practice and guidance for emergency preparedness and response based on in-country research.
- Review and update RD&I legislation and processes at national and subnational levels in relevant sectors.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7

## Tools:

- Partners platform for health in emergencies [website]. Geneva: World Health Organization; 2023 (<https://partnersplatform.who.int/en/>).
  - Emergency medical teams initiative [website]. Geneva: World Health Organization; 2020 (<https://extranet.who.int/emt/>).
  - Health innovation for impact. Digital health [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/teams/digital-health-and-innovation/health-innovation-for-impact>).
  - Institute of Medicine (US) Roundtable on Research and Development of Drugs, Biologics, and Medical Devices. Washington DC: Davis JR, Nolan VP, Woodcock J, and Estabrook RW; 1999 (<https://www.ncbi.nlm.nih.gov/books/NBK224577/>).
  - Strategic toolkit for assessing risks: a comprehensive toolkit for all-hazards health emergency risk assessment. Geneva: World Health Organization; 2021 (<https://www.who.int/publications/i/item/9789240036086>).
  - Words into Action guidelines: National disaster risk assessment. Geneva: United Nations Office for Disaster Risk Reduction; 2017 (<https://www.undrr.org/publication/words-action-guidelines-national-disaster-risk-assessment>).
  - Rapid risk assessment of acute public health events. Geneva: World Health Organization; 2012 (<https://apps.who.int/iris/handle/10665/70810>).
  - WHO Human Health Risk Assessment Toolkit: Chemical Hazards, second edition. Geneva: World Health Organization; 2021 (<https://www.who.int/publications/i/item/9789240035720>).
  - Joint Risk Assessment Operational Tool. Food and Agriculture Organization of the United Nations, World Health Organization and World Organisation for Animal Health; 2020 (<https://www.who.int/initiatives/tripartite-zoonosis-guide/joint-risk-assessment-operational-tool>).
  - Kandel N, Chungong S, and the WHO Technical Working Group of the Dynamic Preparedness Metric and Health Security Preparedness Department. Dynamic preparedness metric: a paradigm shift to measure and act on preparedness. The Lancet Global Health. 2022; 10(5), e615–e616. doi: 10.1016/S2214-109X(22)00097-3.
  - Framework for a Public Health Emergency Operations Centre. Geneva: World Health Organization; 2015 (<https://apps.who.int/iris/handle/10665/196135>).
- This document from WHO outlines the key concepts and essential requirements for developing and managing a PHEOC. It provides an outline for developing and managing a PHEOC to achieve a goal.*
- Handbook for developing a public health emergency operations centre part A: Policies, plans and procedures. Geneva: World Health Organization; 2018 (<https://www.who.int/publications/i/item/handbook-for-developing-a-public-health-emergency-operations-centre-part-a>).
  - Handbook for developing a public health emergency operations centre part C: training and exercises. Geneva: World Health Organization; 2018 (<https://www.who.int/publications/i/item/handbook-for-developing-a-public-health-emergency-operations-centre-part-c>).



- Handbook for Public Health Emergency Operations Center Operations and Management. Brazzaville: WHO Regional Office for Africa; 2021 (<https://www.afro.who.int/publications/handbook-public-health-emergency-operations-center-operations-and-management>).
- Public Health Emergency Operations Center (PHEOC) Legal Framework Guide: A Guide for the Development of a Legal Framework to Authorize the Establishment and Operationalization of a PHEOC. Brazzaville: WHO Regional Office for Africa; 2021 (<https://www.afro.who.int/publications/public-health-emergency-operations-center-pheoc-legal-framework-guide/>).
- The Public Health Emergency Operations Centre (PHEOC) OpenWHO [website online course]. Geneva: World Health Organization; 2020 (<https://openwho.org/courses/PHEOC-EN>).
- Balajee SA, Pasi OG, Etoundi AGM, Rzeszotarski P, Do TT, Hennessee I, et al. Sustainable Model for Public Health Emergency Operations Centers for Global Settings. *Emerg Infect Dis.* 2017 Oct;23(13):S190–5. doi:10.3201/eid2313.170435.
- Incident Management System (Tier 1) OpenWHO [website online course]. Geneva: World Health Organization (<https://openwho.org/courses/incident-management-system>).  
*A training course from WHO that is designed to help users gain a foundational understanding of the Incident management system structure and its procedures at WHO.*
- FEMA Emergency Management Institution. National Incident Management System (NIMS) [website]. United States of America: Federal Emergency Management Agency; 2015 (<https://training.fema.gov/nims/>).  
*From the US Federal Emergency Management Agency, a series of free interactive online courses on incident management.*
- Public Health Incident Leadership Training [website]. United States of America: Minnesota Department of Health; 2022 (<https://www.health.state.mn.us/communities/ep/training/useee/index.html>).  
*A training for public health practitioners with leadership responsibilities during responses to disasters and events with public health implications.*
- Hazard Information Profiles: Supplement to UNDRR-ISC Hazard Definition & Classification Review - Technical Report. Geneva: United Nations Office for Disaster Risk Reduction; 2021 (<https://www.undrr.org/publication/hazard-information-profiles-hips>).  
*Provides a common set of hazard definitions to governments and stakeholders to inform their strategies and actions on risk reduction and management.*
- International Coordinating Group on Vaccine Provision [website]. Geneva: World Health Organization; 2023 ([https://www.who.int/groups/icg#:~:text=The%20International%20Coordinating%20Group%20\(ICG,to%20countries%20during%20major%20outbreaks\)](https://www.who.int/groups/icg#:~:text=The%20International%20Coordinating%20Group%20(ICG,to%20countries%20during%20major%20outbreaks).)).  
*Has information on mechanisms to manage and coordinate the provision of emergency vaccine supplies and antibiotics to countries during major outbreaks. This includes vaccines for cholera, meningitis and yellow fever.*
- Global Outbreak Alert and Response Network (GOARN) [website]. Geneva: Global Outbreak Alert and Response Network; 2023 (<https://goarn.who.int/>).  
*Provides information on how to prepare for field activity, to activate international support, to coordinate response in the field, to evaluate and follow up outbreaks of international importance.*

- Classification and Minimum Standards for Emergency Medical Teams. Geneva: World Health Organization; 2021 (<https://apps.who.int/iris/handle/10665/341857>).  
*Describes the capacities and capabilities of EMTs, as well as their guiding principles and standards.*
- The regulation and management of international emergency medical teams. Geneva: World Health Organization and International Federation of the Red Cross and Red Crescent Societies; 2017 (<https://disasterlaw.ifrc.org/media/1328>).  
*Provides an overview of the issues in regulating and managing international emergency medical teams in a selection of large and small-scale sudden onset disasters.*
- COVID-19: Operational guidance for maintaining essential health services during an outbreak. Interim guidance, 25 March 2020. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/331561>).
- An R&D Blueprint for Action to Prevent Epidemics. Geneva: World Health Organization; 2017 (<https://www.who.int/publications/m/item/an-r-d-blueprint-for-action-to-prevent-epidemics---update-2017>).
- Establishing a global coordination mechanism of R&D to prevent and respond to epidemics – toward implementation of the GCM. Meeting Report from 28 March 2017, London, UK at the Wellcome Trust for the R&D Blueprint. London: World Health Organization; 2017 ([https://www.who.int/docs/default-source/blue-print/gcm/blue-print-gcm-2017-meetingsummary.pdf?sfvrsn=3f78ce1c\\_2](https://www.who.int/docs/default-source/blue-print/gcm/blue-print-gcm-2017-meetingsummary.pdf?sfvrsn=3f78ce1c_2)).
- Seven principles for strengthening research capacity in low- and middle-income countries: simple ideas in a complex world. ESSENCE Good Practice Document Series. Geneva: TDR/ World Health Organization; 2014 (<https://tdr.who.int/publications/m/item/2014-06-19-seven-principles-for-strengthening-research-capacity-in-low-and-middle-income-countries-simple-ideas-in-a-complex-world>).
- Planning, monitoring and evaluation Framework for research capacity strengthening. Revision 2016. ESSENCE Good Practice Document Series. Geneva: TDR/ World Health Organization; 2016 ([https://tdr.who.int/docs/librariesprovider10/essence/essence-frwk-2016-web-pdf.pdf?sfvrsn=7282f353\\_6](https://tdr.who.int/docs/librariesprovider10/essence/essence-frwk-2016-web-pdf.pdf?sfvrsn=7282f353_6)).
- WHO guidance on research methods for health emergency and disaster risk management. Geneva: World Health Organization; 2021 (<https://apps.who.int/iris/handle/10665/345591>).
- GLOSSARY of Health Emergency and Disaster Risk Management Terminology. Geneva: World Health Organization; 2020 (<https://www.who.int/publications/i/item/9789240003699>).
- Simulation exercises [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/emergencies/operations/simulation-exercises>).
- WHO simulation exercise manual: a practical guide and tool for planning, conducting and evaluating simulation exercises for outbreaks and public health emergency preparedness and response. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254741>).
- Guidance for after action review (AAR). Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/311537>).
- Guidance for conducting a country COVID-19 intra-action review. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/333419>).



## Health emergency management additional benchmarks

<p><b>BENCHMARK 12B. 1: All hazard health emergency and disaster risk management (EDRM) are mainstreamed across IHR capacities</b></p> <p><b>OBJECTIVE: To ensure all hazard health emergency and disaster risk management across the IHR capacities.</b></p>	
CAPACITY LEVEL	BENCHMARK ACTIONS
<p><b>01</b> NO CAPACITY</p>	<ul style="list-style-type: none"> <li>● No integration of all hazard health EDRM into IHR capacities.</li> </ul>
<p><b>02</b> LIMITED CAPACITY</p>	<ul style="list-style-type: none"> <li>● Conduct mapping of all areas requiring integration of all hazard health EDRM into IHR capacities at national and subnational level.</li> <li>● Establish a working group with key health and relevant other sector stakeholders for the review and development of a mechanism<sup>73</sup> to mainstream all hazard health EDRM for IHR capacities.</li> <li>● Designate a focal point/unit for all hazard health EDRM at the national level.</li> <li>● Assess human resources capacities for all hazard health EDRM.</li> <li>● Develop advocacy mechanisms to for all hazard health EDRM.</li> </ul> <p>Participation and contribution of other sectors to actions:</p> <p>1, 2, 3, 4, 5</p> <ul style="list-style-type: none"> <li>● Provide information<sup>74</sup>, from relevant sectors, on the national disaster risk management architecture that is linked to the health sector.</li> <li>● Map monitoring and early warning mechanisms related to different hazards across sectors.</li> </ul>

<sup>73</sup> Policies, strategies, guidelines, SOPs as needed.

<sup>74</sup> Use multisectoral capacity assessment tools, such as the Capacity for Disaster Reduction Initiative (CADRI) partnership diagnostic tools and other health emergency and disaster risk management assessment tools to identify capacity gaps for health EDRM.

## 03 DEVELOPED CAPACITY

- Establish all hazard health EDRM coordination and planning mechanisms to mainstream health EDRM in health sectors.
- Conduct advocacy campaigns to introduce all hazard health EDRM at the national and subnational levels.
- Integrate all hazard health EDRM into relevant health policies, strategies and plans at national level aligned with IHR and international frameworks<sup>75,76</sup>.
- Develop, establish and test a coordination mechanism for the national health response to disasters, especially natural, technological and societal.
- Map domestic and international financing sources for all hazard health EDRM and allocate financial resources to address gaps and support capacity development for all hazard health EDRM.
- Develop and disseminate training packages on all hazard health EDRM at the national level.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6

- Update all hazard, whole-of-society/multisectoral plans and legislation for disaster risk management across relevant sectors at national level.
- Review and update national disaster risk reduction (DRR) strategies to include health risks of emergencies and disasters.
- Establish and link early warning mechanisms related to different hazards across sectors at the national level.
- Establish a national platform or committee on emergency/disaster risk management, covering all hazards, with the health sector represented.

## 04 DEMONSTRATED CAPACITY

- Integrate all hazard health EDRM considerations into all relevant health policies, strategies and plans at subnational level, aligned with IHR and international frameworks.
- Conduct regular reviews, M&E, SimEx/AAR/IAR (as relevant) to test the all hazard health EDRM coordination mechanisms at national and subnational levels.
- Establish a coordination mechanism for the health response to disasters, especially natural, technological and societal at the subnational level.
- Develop and disseminate trainings on all hazard health EDRM at the subnational level considering specific subpopulations<sup>77</sup>.

<sup>75</sup> Including Sendai Framework for Disaster Risk Reduction (UNDRR, 2015), Paris Agreement (2016), WHO Health EDRM Framework (2019).

<sup>76</sup> To address the risks and needs of women and other groups identified as most at risk of being left behind as a result of disaster and climate change.

<sup>77</sup> Including consideration for different levels of vulnerability, across prevention/mitigation, preparedness, response and recovery, including capacities for cross-border or multinational action, taking into account the possible cascading effects of a disaster and critical interdependencies among sectors and stakeholders.

- Scale up all hazard health EDRM in non-government sectors, including private sector.
- Document the economic impacts of disasters on health and socioeconomic systems.

Participation and contribution of other sectors to actions:

- 1, 2, 3, 4, 5, 6
- Updated all hazard, whole-of-society/multisectoral plans for disaster risk management across relevant sectors at the subnational level.
- Implement national DRR strategies to include health risks of emergencies and disasters at national and subnational levels.
- Establish and link early warning mechanisms related to different hazards across sectors at the subnational level.
- Evaluate the integration of all hazard health EDRM into IHR capacities and update the mechanisms as needed<sup>78</sup>.
- Secure anticipatory finance mechanisms that are designed to address all hazard health EDRM for IHR capacities.
- Conduct all hazard health EDRM research and development at the national and subnational levels.
- Evaluate the coordination mechanism for the health response to disasters, especially natural, technological and societal at the subnational level.
- Engage the country in peer-to-peer learning programmes at the subnational, national and international levels.
- Include considerations for all hazard health EDRM in undergraduate and postgraduate curricula for health professionals in universities and other learning programmes.

Participation and contribution of other sectors to actions:

- 1, 2, 3, 4, 5, 6
- Evaluate the integration of all hazard health EDRM in DRR strategies and update the strategies based on the findings.

## 05 SUSTAINABLE CAPACITY

<sup>78</sup> To address the risks and need of women and other groups identified as most at risk of being left behind as a result of disaster and climate change.

<b>BENCHMARK 12B.2: Safe and resilient hospitals and health facilities are in place to rapidly respond to emergencies<sup>79</sup></b> <b>OBJECTIVE: To assess, develop and establish safe and resilient hospital and health facility capabilities as part of the Hospital Safety Programme<sup>80</sup> (HSP) before, during and after emergencies</b>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● No strategies or plans in place for HSP capabilities for safe and resilient hospitals and health facilities.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Map HSP capabilities<sup>81</sup> in policies, norms and legislation at national and subnational levels and identify gaps.</li> <li>● Develop standards for hospital accreditation for safety, resilience and preparedness that correspond to the mapping of HSP capabilities.</li> <li>● Identify a focal point for hospital preparedness and mass casualty management at the national level for coordination and service delivery.</li> <li>● Develop minimum standards of hospital workforce, including capacity-building of medical teams for rapid response as part of HSP resources management.</li> <li>● Assess the current level of resources for workforce/rapid response medical teams, equipment and supplies as part of HSP resources management.</li> <li>● Conduct a hospital safety and risk management assessment for health facilities.</li> <li>● Establish and train a hospital incident management (IM) team and function, identify a hospital IM leader and determine relevant SOPs.</li> </ul>
	Participation and contribution of other sectors to actions: 1, 2, 5, 6

<sup>79</sup> Hospitals and health facilities share interdependencies with multiple IHR benchmarks, e.g. Human Resources, National Laboratory Systems, Infection Prevention and Control, Surveillance Systems and Medical Counter Measures, Health Services Provision that collaboratively support maintaining continuity of Essential Health Services (EHS) and have interdependencies that extend into Community Engagement via whole-of-society partners and their engagement.

<sup>80</sup> The Hospital Safety Index is a tool that helps to assess the probability that a hospital or health facility will continue to function in emergency situations, based on structural, non-structural and functional factors, and provides a snapshot of areas that need to be addressed to ensure that the services remain accessible and functioning at maximum capacity during and immediately following the impact of a disaster. Hospital safety index: guide for evaluators, second edition. Geneva: World Health Organization; 2015

<sup>81</sup> Policies, legislation, laws and regulations, guidelines, SOPs and functionality for hospital resiliency, mass casualty management and incorporation of green technologies.

## 03 DEVELOPED CAPACITY

- Establish minimum standards that are reflected in policy, norms and legislation for HSP hospital design and construction at the national level (e.g. mass casualty management and referral pathways).
- Implement recommendations of the hospital risk assessment into policies, strategies and plans at the national level.
- Develop and implement hospital safety plans as part of national HSP coordination of service delivery.
- Develop, test and establish hospital coordination systems<sup>82</sup> at the national level.
- Develop a mechanism to coordinate with nongovernment sectors including private hospitals and facilities.
- Establish and implement minimum construction standards for safe and secure hospitals, including the protection of resources (workforce, equipment and supplies), at the national level across relevant sectors<sup>83</sup>.
- Develop a training package to implement the HSP and disseminate at the national level.
- Develop and test a flexible hospital IM structure<sup>84</sup> to engage across hospital departments.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8

## 04 DEMONSTRATED CAPACITY

- Establish minimum standards for HSP policy, norms and legislation of hospital design and construction at the subnational level (e.g. mass casualty management and referral pathways).
- Implement coordinated service delivery of hospital safety plans as part of the national HSP at the subnational level.
- Conduct resource management trainings to implement the HSP at the subnational level.
- Implement minimum construction standards for safe and secure hospitals, including the protection of resources (workforce, equipment and supplies) at the subnational level across relevant sectors.
- Allocate funding to ensure safe and resilient hospitals and health facilities at the national and subnational levels.
- Implement the recommendations of the hospital risk assessment, into policies, strategies and plans at the subnational level.
- Conduct SimEx/AARs/IAR (as relevant) to evaluate hospital and health facility safety and resilience.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7

<sup>82</sup> Coordination systems includes stockpiles of supplies of local, national and international health assistance, workforce and resource sharing.

<sup>83</sup> Such a non-government, private, military hospitals etc.

<sup>84</sup> With clear lines of accountability, roles and responsibilities, and has the capacity to communicate with patients and the public in accordance with hospital policy.

<sup>85</sup> Coordination systems includes stockpiles of supplies of local, national and international health assistance, workforce and resource sharing.

## 05 SUSTAINABLE CAPACITY

- Evaluate HSP at the national and subnational levels and update programmes based on findings.
- Regularly conduct refresher trainings to implement the HSP at all levels including nongovernment sectors.
- Document and share best practices and lessons learned from HSP in health emergencies and engage the country in peer-to-peer learning at the subnational, national and international levels.
- Sustain contingency and operational funding to maintain safe and resilient hospitals and health facilities.
- Develop an all hazards hospital and mass casualty research and development strategy, and conduct research activities.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5

<p><b>BENCHMARK 12B.3: Emergency resources, needs and gaps are identified and mapped, and information shared with decision-makers and partners based on country risk profiles to inform resource strategies and activities.</b></p> <p><b>OBJECTIVE: To develop inventories and maps of available resources for emergency preparedness and response and plan for effective utilization based on country risk profiles.</b></p>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● No formal resource mapping or planning for effective utilization of emergency resources is in place.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Identify stakeholders across sectors to be involved in the identification, mapping and utilization of resources for emergency preparedness and response.</li> <li>● Map current national level resources to support health sector emergency preparedness, readiness and response at the national level, including human resources, finances, infrastructure, logistics and supplies (such as health facilities, public health emergency operation centres, transport, vehicles, cold chain capacities, telecommunications, warehousing, supply routes, etc.).</li> <li>● Identify health sector needs and gaps (financial, technical and in-kind) based on the mapping of resources.</li> <li>● Identify and engage relevant ministries and/or partners who can support health sector needs and gaps based on the mapping of resources.</li> <li>● Review existing legal frameworks to facilitate emergency resources identification, mapping and utilization at the national and subnational levels, and draft additional legal provisions if necessary.</li> <li>● Develop country public health profile including mapping of resources and high risk areas for major daily health issues with public health experts.</li> </ul>
<p>Participation and contribution of other sectors to actions: 1, 2, 3, 4, 5, 6</p>	



## 03 DEVELOPED CAPACITY

- Map current resources to support emergency preparedness, readiness and response in relevant sectors at the national level.
- Identify needs and gaps (financial, technical and in-kind) in relevant sectors based on the mapping of resources.
- Develop national level inventories based on resource mapping for emergency preparedness and response.
- Identify and engage relevant ministries and/or partners who can support relevant sector needs and gaps based on the mapping of resources.
- Refer to the country public health risk profile and identify public health resources at national and subnational levels.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5

## 04 DEMONSTRATED CAPACITY

- Identify sector-specific country risk profiles for mapping, planning and prioritization of resources for prevention, mitigation and preparedness activities toward all hazards.
- Map current resources to support emergency preparedness, readiness and response in health and relevant sectors at the subnational level.
- Develop subnational level inventories based on resource mapping for emergency preparedness and response.
- Identify and engage relevant ministries and/or partners who can support subnational needs and gaps based on the mapping of resources across health and relevant sectors.
- Secure funding for resource mapping and developing inventories based on country risk profiles, at all levels, across all relevant sectors.
- Review national level resources (critical stock levels for priority risks) on an annual basis or when needed.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6

## 05 SUSTAINABLE CAPACITY

- Review and update national and subnational resource maps for all hazards that have a potential to cause health emergencies on a regular basis (at least every 3 years) based on the risk profile.
- Adjust deployment of resources to areas most at need at national and subnational levels, based on updated resource mapping.
- Secure funding to conduct rapid resource needs assessments during emergency situations.
- Engage the country in peer-to-peer learning programmes at the subnational, national and international levels to support capacity-building for mapping and utilization of emergency resources.

Participation and contribution of other sectors to actions:

1, 2, 3, 4

<b>BENCHMARK 12B.4: Multisectoral planning for health emergency preparedness and response is in place</b>	
<b>OBJECTIVE: To develop and implement multisectoral and multihazard health emergency preparedness measures including emergency response plans at all levels of governance</b>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● Multisectoral and multihazard health emergency preparedness and response measures are not planned or implemented properly, or efforts are ad hoc.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Map key ministries and multisectoral stakeholders involved in multihazard health emergency preparedness and response including human, animal (domestic and wildlife) and environmental health sectors, meteorology, border control, food and drug agency, military, private agricultural sector, emergency services, interior, defence, transport, media and finance.</li> <li>● Conduct capacity assessments of each stakeholder to support emergency preparedness for priority risks at the national level, as appropriate, and clearly define the roles and responsibilities for each sector.</li> <li>● Form a multisectoral technical advisory group, with clear leadership and governance, gathering experts from relevant sectors to develop a multisectoral multihazard emergency response plan at the national level.</li> <li>● Review current health sector multihazard emergency response plans and other response plans for specific hazards.</li> <li>● Develop or update the national health sector multihazard emergency response plan, including a performance monitoring framework with indicators, criteria and timelines.</li> <li>● Involve emergency preparedness experts in the development of NHPSPs to define the country's vision, policy directions and strategies for ensuring strengthening of health system capacity for emergency preparedness.</li> </ul> <p>Participation and contribution of other sectors to actions: 1, 2, 3, 4, 5, 6</p>
<b>03</b> <b>DEVELOPED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Institutionalize (through MoUs, SOPs, ToRs) the multisectoral coordination for health emergency preparedness and response and any necessary legal instruments and guidelines for implementation of measures.</li> <li>● Implement emergency preparedness measures at the national level by human health, animal health and other relevant sectors, including for points of entry and mass gathering events, and assess the need for additional measures, including policies, procedures, SOPs and financial mechanisms, required to strengthen emergency preparedness.</li> </ul>

- Develop, review, implement and assess the multisectoral multihazard emergency response plan at the national level, including conducting a national level SimEx/AAR/IAR (as relevant) to test and adjust the plan based on outcomes.
- Develop advocacy and training strategies for strengthening emergency preparedness measures and the multisectoral multihazard emergency response plan at the national level.
- Disseminate advocacy materials and conduct trainings to raise awareness within the community and media and train relevant multisectoral experts on the multisectoral multihazard emergency preparedness and response plan at the national level.
- Secure capacity required for emergency preparedness measures for specific hazards or risk scenarios, including contingency planning, additional training and equipment.
- Develop mechanisms and SOPs to implement domestic and international surge capacity as part of the multisectoral multihazard emergency response plan.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7

## 04 DEMONSTRATED CAPACITY

- Implement and monitor emergency preparedness measures at national and subnational levels by human health, animal health and relevant sectors, including at points of entry and mass gathering events.
- Conduct capacity-building and awareness raising programmes for specific community groups (e.g. three wheeler drivers/cab drivers who can support transport of casualties, community leaders, youth groups, media, religious leaders etc.) and communities to ensure participatory approach in preparedness and response to emergencies.
- Develop, update and implement multisectoral multihazard subnational and local emergency response plans.
- Conduct SimEx/AAR/IAR (as relevant) at national and subnational levels to test the multisectoral multihazard emergency response plan with a focus on coordination and communication between the national and subnational levels of government and sectors, and adjust plans based on outcomes.
- Implement training for emergency preparedness and response at subnational levels.
- Review and develop emergency response plans for cross-border and multicountry events with regional counterparts and international partners.

- Review emergency plans regarding other public health topics (e.g. humanitarian preparedness and response plans) for alignment with the national multisectoral multihazard plans for health emergency preparedness and response and adjust as needed.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7

- Review relevant sector-specific plans for alignment with the national multisectoral multihazard plans for health emergency preparedness and response and adjust as needed.

## 05 SUSTAINABLE CAPACITY

- Regularly conduct SimEx/AAR/IAR (as relevant) to test multisectoral multihazard emergency response plans at national and subnational levels involving relevant sectors. Implement measures to build capacities based on outcomes and recommendations and adjust plans based on lessons learned.
- Conduct international SimEx to test multisectoral multihazard emergency response plans for multiple country events. Adjust plans and strengthen emergency preparedness based on outcomes and recommendations.
- Assign dedicated human resources and sustain regular budget funding to support the coordination and implementation of emergency preparedness measures by human health, animal health and relevant sectors.
- Develop a mechanism to ensure that dedicated resources, including manpower and funding, are in place for testing and implementation of multisectoral multihazard emergency response plans, contingency plans and SOPs at national and subnational levels including an emergency financing mechanism for emergency response.
- Engage the country in peer-to-peer learning programmes at the subnational, national and international levels, including initiatives to support capacity-building for multisectoral multihazard emergency preparedness in compliance with the IHR at the global level.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5

- Provide a good governance environment to enable effective implementation of the multisectoral multihazard emergency preparedness and response plans for IHR with reliable institutions, good domestic policies and respect of citizens' rights and liberties.

## Tools:

- Health emergency and disaster risk management framework. Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/326106>).
- Strategic toolkit for assessing risks: a comprehensive toolkit for all-hazards health emergency risk assessment. Geneva: World Health Organization; 2021. (<https://apps.who.int/iris/handle/10665/348763>).
- Words into Action Guidelines. National Disaster Risk Assessment. Governance Systems, Methodologies, and Use of Results. Geneva: United Nations Office for Disaster Risk Reduction; 2017 ([https://www.unisdr.org/files/52828\\_nationaldisasterassessmentpart1.pdf](https://www.unisdr.org/files/52828_nationaldisasterassessmentpart1.pdf)).
- Rapid Risk Assessment of Acute Public Health Events. Geneva: World Health Organization; 2012 (<https://apps.who.int/iris/handle/10665/70810>).
- WHO Human Health Risk Assessment Toolkit: Chemical Hazards, second edition. Geneva: World Health Organization; 2021 (<https://www.who.int/publications/i/item/9789240035720>).
- Joint Risk Assessment Operational Tool. Food and Agriculture Organization of the United Nations, World Health Organization and World Organisation for Animal Health; 2020 (<https://www.who.int/initiatives/tripartite-zoonosis-guide/joint-risk-assessment-operational-tool>).
- Kandel N, Chungong S, and the WHO Technical Working Group of the Dynamic Preparedness Metric and Health Security Preparedness Department. Dynamic preparedness metric: a paradigm shift to measure and act on preparedness. *The Lancet Global Health*. 2022; 10(5), e615–e616. doi: 10.1016/S2214-109X(22)00097-3.
- Hospital safety index: guide for evaluators, 2nd edition. Geneva: World Health Organization & Pan American Health Organization; 2015 (<https://apps.who.int/iris/handle/10665/258966>).
- Capacity for Disaster Reduction Initiative (CADRI) tool [website]. CARDI; 2021 (<https://www.cadri.net/cadritool/home>).
- *Supports countries to develop integrated strategies to address climate and disaster risk*.
- Sendai Framework for Disaster Risk Reduction. 2015–2030. Geneva: United Nations Office for Disaster Risk Reduction; 2015 (<https://www.undrr.org/publication/sendai-framework-disaster-risk-reduction-2015-2030>).
- The Paris Agreement [website]. United Nations Climate Change; 2023 (<https://unfccc.int/process-and-meetings/the-paris-agreement>).
- Simulation exercises [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/emergencies/operations/simulation-exercises>).
- WHO simulation exercise manual: a practical guide and tool for planning, conducting and evaluating simulation exercises for outbreaks and public health emergency preparedness and response. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254741>).
- Guidance for after action review (AAR). Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/311537>).
- Guidance for conducting a country COVID-19 intra-action review. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/333419>).

# 13

## Linking public health and security authorities

The country conducts a rapid, multisectoral response for any event of suspected or confirmed deliberate origin, including the capacity to link public health and law enforcement, and to provide timely international assistance.



### IMPACT:

Development and implementation of a memorandum of understanding (MoU) or other similar framework outlining roles, responsibilities and best practices for sharing relevant information among appropriate human and animal health, law enforcement and defence personnel, and validation of the MoU through periodic exercises and simulations. Countries have systems to conduct and support joint epidemiological and criminal investigations to identify and respond to suspected biological, chemical or radiological incidents of suspected deliberate origin in collaboration with States Parties' Biological and Toxin Weapons Convention (BTWC), FAO, International Atomic Energy Agency (IAEA), International Criminal Police Organization (INTERPOL), WOHAI, Organisation for the Prohibition of Chemical Weapons (OPCW), the United Nations Secretary-General's Mechanism for Investigation of Alleged Use of Chemical and Biological Weapons, WHO and other relevant regional and international organizations as appropriate.



### MONITORING AND EVALUATION:

Evidence of at least one response in the previous year that effectively links public health and law enforcement, or a formal exercise or simulation involving leadership from the country's public health and law enforcement communities.



<b>BENCHMARK 13.1: Public health and security authorities (law enforcement, border control, customs) are linked during a suspected or confirmed biological, chemical or radiological event</b> <b>OBJECTIVE: To strengthen the linkage between public health and security authorities for a rapid multisectoral response to suspected or confirmed biological, chemical or radiological event</b>	
CAPACITY LEVEL	BENCHMARK ACTIONS
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● No legislation, relationships, protocols, MoUs or other agreements exist between public health, animal health, radiological safety, chemical safety and security authorities to address all hazards.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Identify sectors responsible for response to potential IHR related hazards (biological, chemical and radiation).</li> <li>● Identify points of contact to assist with the implementation of prevention, detection and response activities at government agencies across multiple sectors (such as public health, animal health, security authorities, agriculture, chemical, radiation).</li> <li>● Determine the roles and responsibilities for responding to various threats and other incidents of concern through a review of national response plans, policies and procedures, or other means such as an engagement meeting.</li> <li>● Assess risk of significant biological (and chemical or radiological) incidents of concern to the country.</li> <li>● Develop triggers for sharing information on biological threats or other incidents of concern (such as chemical and radiological) with relevant multisectoral agencies.</li> <li>● Establish an informal or formal communications process to share information, based on identified triggers, related to biological threats or other incidents of concern (such as chemical and radiological) among relevant multisectoral agencies (such as public health, animal health and security authorities).</li> <li>● Train staff on joint risk assessment and application of triggers, and sharing of information among all sectors relevant to hazards.</li> <li>● Develop and disseminate advocacy material to raise awareness of staff in relevant sectors about their role for the management of biological threats or other incidents of concern (such as chemical and radiological).</li> </ul> <p>Participation and contribution of other sectors to actions: 1, 2, 3, 4, 5, 6, 7, 8</p>

## 03 DEVELOPED CAPACITY

- Establish communications with animal health and security/law enforcement points of contact who would need to collaborate in the case of a suspected deliberate event.
- Identify appropriate activities (such as notifications, assessments, investigation, laboratory testing) for response to biological threats or other incidents of concern (such as chemical and radiological), which will be covered by a written protocol or MoU between sectors.
- Develop logistical plans to include multisectoral agencies, including law enforcement, if appropriate, in the PHEOC.
- Determine sample collection, transport, storage, security and testing requirements among relevant sectors (such as public health, security authorities, agriculture) for biological threats and other incidents of concern (such as chemical and radiological).
- Finalize a written protocol or MoU that formalizes and institutionalizes interactions between relevant multisectoral agencies (public health, animal health and security authorities).
- Develop SOPs defining the process and communication mechanisms for assessing and responding to suspected deliberate international events.
- Develop training curriculum using country specific content (such as regulations/authorities, agency roles/responsibilities and case studies).
- Organize advocacy events to sensitize staff from relevant sectors on roles and responsibilities during a suspected or confirmed biological threat or other incidents of concern (such as chemical and radiological) event.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8

- Map capacities in relevant sectors for emergency preparedness and response to biological threats or other incidents of concern (such as radiological and chemical) to establish a baseline for collaboration.

## 04 DEMONSTRATED CAPACITY

- Conduct regular trainings in relevant sectors.
- Conduct at least one health emergency response, or SimEx, per year that includes appropriate information sharing between public health and security authorities using the formal protocol or MoU.
- Document findings of the response or SimEx, highlight the gaps and best practices, and adjust protocols as appropriate.
- Conduct and document joint training of public health, animal health and security authorities to orient, exercise and institutionalize the knowledge of MoUs and other agreements related to all hazards.

Participation and contribution of other sectors to actions:

1, 2, 3, 4

## 05 SUSTAINABLE CAPACITY

- Conduct and document regular joint training/exercise programmes at national and subnational levels for public health, animal health and security authorities to exercise and institutionalize knowledge of MoUs and other agreements related to all hazards.
- Expand joint risk assessment, exchange of information, reporting and implementation activities to all levels.
- Conduct an evaluation to determine whether information about events of joint concern is shared in a timely and effective manner at all levels as outlined in formal MoUs or other agreements/protocols, that the response is appropriate and effective, and that corrective action is taken based on evaluation.
- Review and update the SOPs, protocols, MoUs, trainings, etc. for collaboration between public health and security authorities based on lessons learned from M&E and follow up from the implementation of recommendations.
- Involve the country in international initiatives for linking public health and security authorities to share lessons learned and best practices during suspected or confirmed biological, chemical or radiological events at the global level.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5

- Sustain linkage between security authorities and public health sector for joint management of suspected or confirmed biological, chemical or radiological events through ToRs for relevant security authorities.

### Tools:

- Multisectoral preparedness coordination framework: best practices, case studies and key elements of advancing multisectoral coordination for health emergency preparedness and health security. Geneva: World Health Organization; 2020 (<https://www.who.int/publications/i/item/9789240006232>).
- National civil-military collaboration framework for strengthen health emergency preparedness. Geneva: World Health Organization; 2021 (<https://apps.who.int/iris/handle/10665/343571>).
- WHO–WOAH Operational framework for good governance at the human–animal interface: Bridging WHO and OIE tools for the assessment of national capacities. World Health Organization and World Organisation for Animal Health; 2014 (<https://www.who.int/publications/i/item/who-oie-operational-framework-for-good-governance-at-the-human-animal-interface>).
- Chapter 3.4 Veterinary legislation. In Terrestrial Animal Health Code. Paris: World Organisation for Animal Health; 2022 ([https://www.woah.org/en/what-we-do/standards/codes-and-manuals/terrestrial-code-online-access/?id=169&L=1&htmlfile=chapitre\\_vet\\_legislation.htm](https://www.woah.org/en/what-we-do/standards/codes-and-manuals/terrestrial-code-online-access/?id=169&L=1&htmlfile=chapitre_vet_legislation.htm)).

- Convention on the prohibition of the development, production, stockpiling and use of chemical weapons and on their destruction. The Hague: Organisation for the Prohibition of Chemical Weapons; 2020 (<https://www.opcw.org/chemical-weapons-convention/download-convention>).
- Treaty on the non-proliferation of nuclear weapons. Information Circular. Vienna: International Atomic Energy Agency; 1970 (<https://www.iaea.org/sites/default/files/publications/documents/infcircs/1970/infcirc140.pdf>).
- Guide to Participating in the Confidence-Building Measures of the Biological Weapons Convention. Geneva: United Nations Office for Disarmament Affairs; 2015 (<https://disarmament.unoda.org/publications/more/cbm-guide>).
- Biological Weapons Convention [website]. Geneva: United Nations Office for Disarmament Affairs; 2023 (<https://disarmament.unoda.org/biological-weapons/>).
- Joint Criminal and Epidemiological Investigations Handbook (2016) International Edition. United States of America: FBI; 2016 (<https://www.fbi.gov/file-repository/joint-criminal-and-epidemiological-investigations-handbook-2016-international-edition/view>).
- Biological Threat Reduction Strategy. Paris: World Organisation for Animal Health; 2015 (<https://www.woah.org/en/what-we-do/global-initiatives/biological-threat-reduction/>).
- Simulation exercises [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/emergencies/operations/simulation-exercises>).
- WHO simulation exercise manual: a practical guide and tool for planning, conducting and evaluating simulation exercises for outbreaks and public health emergency preparedness and response. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254741>).

# 14

## Health services provision

Resilient national health systems are essential for countries to prevent, detect, respond to and recover from public health events, while ensuring the maintenance of health systems functions, including the continued delivery of essential health services (EHS) at all levels. Particularly in emergencies, health services provision for both event-related case management and routine health services are equally as important. Moreover, ensuring minimal disruption in health service utilization before, during and after an emergency – and across the varied contexts within a country – is also a critical aspect of a resilient health system.



### IMPACT:

Resilient health systems that are capable of delivering emergency related clinical care, and optimal utilization of health services while ensuring continuity of health systems functions including delivery of essential health services in emergencies.



### MONITORING AND EVALUATION:

(1) Evidence of demonstrated application of case management procedures for events caused by IHR relevant hazards. (2) Optimal utilization of health services, including during emergencies. (3) Ensuring continuity of essential health services in emergencies.

BENCHMARK 14.1: Case management procedures are implemented for relevant IHR hazards	
OBJECTIVE: To develop and implement case management procedures for all relevant IHR hazards	
CAPACITY LEVEL	BENCHMARK ACTIONS
<b>01</b> NO CAPACITY	<ul style="list-style-type: none"> <li>● No case management guidelines are available for priority health events<sup>86</sup>.</li> </ul>
<b>02</b> LIMITED CAPACITY	<ul style="list-style-type: none"> <li>● Develop a list of priority diseases and IHR relevant hazards based on the country risk profile at national and subnational levels.</li> <li>● Establish a scientific advisory board involving senior health experts, including academia, to lead the development of standardized case management guidelines<sup>87</sup> for priority diseases and IHR relevant hazards.</li> <li>● Develop standardized case management guidelines for priority diseases and IHR relevant hazards.</li> <li>● Develop triggers for sharing and recording information on diseases, conditions and public health emergencies of international concern with relevant multisectoral agencies.</li> <li>● Develop dissemination plans (including training packages) for case management guidelines for all levels targeting all relevant health workers.</li> <li>● Map health system resources available to manage cases of priority diseases and simultaneously maintain routine essential health services, including a primary health care approach.</li> <li>● Develop a package of health services required for effective, safe, high quality case management in priority health emergencies and adapt to be relevant at all levels of care.</li> <li>● Adapt case management training package to be relevant to the roles of key stakeholders from relevant sectors and disseminate accordingly.</li> </ul> <p>Participation and contribution of other sectors to actions: 2, 4, 8</p>

<sup>86</sup> e.g. epidemic prone diseases, trauma, chemical events, radiation emergencies, etc.

<sup>87</sup> To identify novel approaches for case management of IHR hazards/case management guidelines for new diseases and advise the development/update of case management guidelines in the country.

## 03 DEVELOPED CAPACITY

- Disseminate case management guidelines at the national level and to points of entry, and test implementation.
- Develop and disseminate SOPs for the management and transport of potentially infectious patients, including patient referral, transportation mechanisms and referral centres based on priority risks at the national level.
- Review and adapt the legal framework for quality, safe and secure implementation of case management procedures for relevant IHR hazards at the national and subnational levels.
- Train relevant health workers at the national level, including managers and decision-makers, on case management guidelines (as applicable to the target audience) and update preservice training curricula for health professionals to include current guidelines on case management of priority diseases.
- Prioritize investment in prehospital care facilitates/patient transport mechanisms.
- Conduct multidisciplinary SimEx/AAR/IAR (as relevant) at the national level including review of the effectiveness and efficiency of case management guidelines.
- Develop and maintain an up-to-date roster of health workers trained in case management of priority risks/diseases, based on national and subnational risk profiles.

Participation and contribution of other sectors to actions:  
1, 2, 3, 4, 5, 6

- Provide a list of trained personnel from relevant sectors for the case management roster, including the private sector.

## 04 DEMONSTRATED CAPACITY

- Disseminate case management guidelines and SOPs for the management and transport of potentially infectious patients at the subnational level.
- Review case management, patient referral, transportation mechanisms, management and transportation of potentially infectious patients and document in accordance with guidelines and SOPs based on actual experience or a specific exercise to evaluate these procedures.
- Consider specific requirements for vulnerable groups including children, woman, elderly, forcibly displaced people, etc. are included in case management processes, guidelines and SOPs for relevant IHR hazards.
- Conduct regular multidisciplinary SimEx/AAR/IAR (as relevant) with participation from all levels of health service delivery, and update case management guidelines and SOPs based on recommendations.

Participation and contribution of other sectors to actions:  
1, 2, 3, 4



## 05 SUSTAINABLE CAPACITY

- Establish a mechanism to allow for the continuous presence of trained staff and resources for case management, patient referral and transportation for all IHR relevant emergencies/hazards.
- Document and disseminate lessons learned from case management for IHR relevant emergencies.
- Train local community health workers on case management guidelines and SOPs for management and transport of patients potentially infected with priority diseases.
- Engage the country in country peer-to-peer learning programmes at the subnational, national and international levels.
- Support research programmes to generate evidence on the development and implementation of guidelines and SOPs for case management, patient referral and transportation for management of IHR relevant emergencies, including community perspectives.
- Establish an institutionalized mechanism for M&E of the implementation of recommendations/application of lessons from SimEx/AAR/IAR (as relevant), etc.

Participation and contribution of other sectors to actions:  
1, 2, 4, 5, 6

- Include the management of priority diseases/events during health emergencies in relevant sector's protocols, policies, plans, etc., with identification of necessary resources to support collaboration with the health sector, recognizing the widespread impacts of health emergencies on all sectors and society.

## BENCHMARK 14.2: Mechanism for continuity of essential health services (EHS) during a health emergency is well established

OBJECTIVE: To ensure continuity of EHS during an emergency

### CAPACITY LEVEL

**01**  
NO CAPACITY

### BENCHMARK ACTIONS

- EHS package is not defined and there are no plans or guidelines for continuity of EHS during emergencies.

**02**  
LIMITED  
CAPACITY

- Define or update the EHS package for the country based on population health needs, with consideration to the continuity of services during a health emergency.
- Conduct a situational analysis of current preparedness activities for the continuation of EHS during emergencies.
- Review existing emergency preparedness and response plans/health sector plans to identify the level of inclusion of continuity of EHS (including population based services) during emergencies.
- Include continuity of EHS package during emergencies into the national health strategic plan and national emergency preparedness and response plans, with provision to provide EHS package to all, including vulnerable groups and those affected by unintended and inequitable consequences of policy measures such as shutdowns/curfews during emergencies.
- Conduct assessments to identify the risks and capacity at all levels of care including primary care, hospitals and field health services to provide EHS and continuation of EHS during health emergencies.
- Involve health system focal points in developing PHEOC plans/protocols with clear identification of the role of health system focal points in PHEOC actions, IMS, ToRs, etc. to support the continuation of EHS during health emergencies.
- Involve PHEOC focal persons in health service continuity planning and health sector strategic and operational plans to maintain coherence between emergency preparedness and response and health service continuity plans.

Participation and contribution of other sectors to actions:

3, 4, 5, 6

- Identify and list all relevant multisectoral stakeholders to support continued delivery of EHS during emergencies, such as prehospital care, transport, delivery of medicine, WASH, supply chain and logistics support, housing, social services and education.
- Incorporate the continued delivery of EHS during a health emergency into the ToRs of relevant sectors.

## 03 DEVELOPED CAPACITY

- Establish and test a well functioning, safe, effective, quality and equitable EHS delivery, including access to primary care, before, during and after emergencies.
- Develop and test mechanism for monitoring EHS continuity before, during and after emergencies, including identification of vulnerable groups who need to be specially considered during specific types of emergencies.
- Develop and test mechanisms for the protection of medical staff, effective staff rotation and optimum IPC methodologies to ensure continuity of EHS through maintaining safe staffing levels.
- Develop mechanisms to support the continuity of EHS at the health facility level during an emergency, such as effective triage and adapted access to primary health care services.
- Train health workers and decision-makers, on their roles to maintain EHS during emergencies and mechanisms developed to support EHS continuity.
- List critical health service operations/functions that need to be continued<sup>88</sup> during health emergencies in the health ministry and all relevant related departments at the national and subnational levels.
- Map private and nongovernment institutions that can be mobilized during emergencies and agree on roles and responsibilities before, during and after emergencies to ensure continuity of EHS alongside emergency service provision.

Participation and contribution of other sectors to actions:

7

- Conduct a risk assessment in relevant sectors to identify and list critical operations and functions that need to be continued during emergencies to the support delivery of EHS.
- Develop continuity planning of essential functions that support the continuity of EHS by relevant sectors including private and nongovernment institutions.
- Develop/update an integrated health information system (surveillance, service delivery, service utilization data) with quality data flow and reporting mechanisms from both public and private sector with an allocated budget for decision-making and continuity of EHS.
- Implement mechanism/system to monitor continuity of EHS before, during and after emergencies.
- Monitor health services data, considering the risk for disruptions during emergency response operations, in coordination with other emergency related data including readiness and response.

## 04 DEMONSTRATED CAPACITY

<sup>88</sup> Which can be maintained at the same place, relocated, performed remotely or temporarily suspended during an emergency and develop mutual aid arrangements between health facilities within the same catchment area to facilitate service continuity in emergency contexts.

- Use data on service delivery continuity to inform decision-making on EHS and optimum emergency response care during emergencies.
- Routinely monitor the availability of health service continuity plans at subnational and health facility levels.
- Conduct SimEx/AAR/IAR (as relevant) at national and subnational levels to test the functionality of EHS continuation plans/guidelines during emergencies.
- Allocate contingency funds that are accessible at subnational and health facility levels for addressing challenges related to continuing EHS during emergencies.
- Develop and finalize prearrangements and MoUs to facilitate EHS continuity during emergency responses, such as relocation of offices, additional transport and accommodation, internet connectivity solutions during an emergency and provision for rapid recruitment of staff at the national and subnational levels during an emergency, including private and nongovernment sectors.

Participation and contribution of other sectors to actions:

1, 3, 6, 7, 8

- Maintain regular communication and coordination mechanisms/platforms between sectors to ensure continuity of EHS before, during and after emergencies.
- Support from relevant sectors to the health ministry before, during and after emergencies as outlined in prearrangements and MoUs.

## 05 SUSTAINABLE CAPACITY

- Update and test plans regularly based on the recommendations from SimEx/AAR/IAR and all relevant M&E processes.
- Identify and conduct health system research on the continuation of EHS during emergencies.
- Share the best practices of EHS during emergencies among subnational, national and international forums.
- Institutionalize/mainstream joint working between emergency, humanitarian response, health system, disease, primary health care, life course specific and other vertical programmes at policy, planning and operational levels for EHS continuity.
- Allocate sufficient resources to the health ministry and all relevant departments for effective maintenance and restoration of critical functions and services to continue EHS at acceptable predefined levels following an emergency.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5

- Update other sector's roles in maintaining EHS during emergencies as part of sector-specific protocols, plans, policies, training etc.

<b>BENCHMARK 14.3: Mechanism is in place to ensure effective utilization of health services before, during and after health emergencies at all levels of health service delivery</b> <b>OBJECTIVE: To ensure effective utilization of health services before, during and after emergencies at all levels of health service delivery</b>	
CAPACITY LEVEL	BENCHMARK ACTIONS
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● Very limited service utilization during and beyond emergencies.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Map existing health services facilities required to deliver safe, effective, quality and equitable health services before, during and after emergencies at the national level.</li> <li>● Conduct a situational analysis of previous or current practices of health service utilization during emergency response, or estimate based on the best available data if no recent health emergency response has occurred.</li> <li>● Establish a technical working group with relevant stakeholders to develop and/or update a functional mechanism<sup>89</sup>, including SOPs<sup>90</sup> to increase or maintain the utilization of health services before, during and after emergencies.</li> <li>● Develop standards for effective health service utilization for all levels of health services, both in government and nongovernment sectors including private sector, before, during and after emergencies.</li> </ul> <p>Participation and contribution of other sectors to actions: 1, 2, 3, 4</p>
<b>03</b> <b>DEVELOPED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Map existing health service facilities required to deliver safe, effective, quality and equitable health services before, during and after emergencies at the subnational level, including nongovernment and private sector health facilities.</li> <li>● Develop a plan to strengthen health facilities that do not have capacity to provide safe, effective, quality and equitable health services before, during and after health emergencies.</li> <li>● Develop and formalize MoUs with nongovernment health facilities, including private sector, to support health service utilization before, during and after emergencies.</li> <li>● Disseminate and implement SOPs to increase or maintain the utilization of health services before, during and after emergencies at the national level.</li> </ul>

<sup>89</sup> Focused on the roles and responsibilities of health facilities before, during and after emergencies.

<sup>90</sup> SOPs focusing on managing different types of health emergencies (like epidemics, disasters (floods, earthquakes), others)

- Disseminate and implement standards for effective health service utilization for health services, both in government and nongovernment sectors including private sector, before, during and after emergencies at the national level.
- Conduct SimEx/AAR/IAR (as relevant) to review/test the SOPs and standards of effective health service utilization at the national level.
- Develop a mechanism and capacity to conduct health service utilization data analysis and interpretation<sup>91</sup> before, during and after emergencies.

Participation and contribution of other sectors to actions:

1, 3, 4, 5, 6

- Support from relevant sectors to provide health services before, during and after emergencies, as appropriate to existing capacities.
- Support from relevant sectors to strengthen government health facilities and improve capacity for health service utilisation.
- Allocate resources to implement plans to strengthen selected health facilities to provide safe, effective, quality and equitable health services before, during and after emergencies.
- Disseminate and implement SOPs to increase or maintain the utilization of health services before, during and after emergencies at the subnational level, including nongovernment and private health facilities.
- Disseminate and implement standards for effective health service utilization for health services, both in government and nongovernment sectors including private sector, before, during and after emergencies at the subnational level.
- Monitor and evaluate health service utilization data before, during and after emergencies.
- Conduct analysis and disseminate results for health service utilization before, during and after emergencies and notify when there is disruption in health service utilization during emergencies.
- Update mechanisms, SOPs and standards based on the result of M&E, including the results of reviews and SimEx.
- Compile health service utilization data from across all facilities and relevant sectors.

Participation and contribution of other sectors to actions:

2, 3, 5, 6, 7

- Providing resource support from relevant sectors to health sector during major emergencies.

## 04 DEMONSTRATED CAPACITY

<sup>91</sup> Analysis by disaggregation by geographical, gender, income, catchment area, urban/rural, private/state facilities, etc.

## 05 SUSTAINABLE CAPACITY

- Disseminate the updated mechanisms, SOPs and standards to all health facilities.
- Conduct reviews of events (SimEx/AAR/IAR, as relevant) regularly on health service utilization at all levels.
- Share or use the results of reviews and analysis of health services utilization to inform the updating or development of national health sector strategic plan.
- Share experiences (best practices/lessons learned) and peer-to-peer learning on health service utilization before, during and after emergencies at regional/national and global forums.

Participation and contribution of other sectors to actions:

1, 2, 4

### Tools:

- Emergency Response Framework (ERF), second edition. Geneva: World Health Organization; 2017 (<https://www.who.int/publications/i/item/9789241512299>).
- Maintaining essential health services: operational guidance for the COVID-19 context: interim guidance, 1 June 2020. Geneva: World Health Organization; 2020 ([https://www.who.int/publications/i/item/WHO-2019-nCoV-essential\\_health\\_services-2020.2](https://www.who.int/publications/i/item/WHO-2019-nCoV-essential_health_services-2020.2)).
- Maintaining essential health services during emergencies [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/teams/primary-health-care/health-systems-resilience/essential-services-during-emergencies>).
- Strategic toolkit for assessing risks: a comprehensive toolkit for all-hazards health emergency risk assessment. Geneva: World Health Organization; 2021 (<https://www.who.int/publications/i/item/9789240036086>).
- Health service continuity planning for public health emergencies: a handbook for health facilities. Geneva: World Health Organization; 2021 (<https://www.who.int/publications/i/item/9789240033337>).
- Health systems for health security: a framework for developing capacities for international health regulations, and components in health systems and other sectors that work in synergy to meet the demands imposed by health emergencies. Geneva: World Health Organization; 2021 (<https://www.who.int/publications/i/item/9789240029682>).
- Building health systems resilience for universal health coverage and health security during the COVID-19 pandemic and beyond: WHO position paper. Geneva: World Health Organization; 2021 (<https://www.who.int/publications/i/item/WHO-UHL-PHC-SP-2021.01>).



- Simulation exercises [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/emergencies/operations/simulation-exercises>).
- WHO simulation exercise manual: a practical guide and tool for planning, conducting and evaluating simulation exercises for outbreaks and public health emergency preparedness and response. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254741>).
- Guidance for after action review (AAR). Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/311537>).
- Guidance for conducting a country COVID-19 intra-action review. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/333419>).

# 15

## Infection prevention and control

Countries should have strong, effective infection prevention and control (IPC) programmes that enable safe health care and essential services delivery and prevention and control of health care acquired infections (HCAIs). It is critical to initially ensure that at least the minimum requirements for IPC are in place, both at the national and facility level, and to gradually progress to the full achievement of all requirements within the WHO IPC core components recommendations.



### **IMPACT:**

Prevent HCAs and emergence and spread of AMR.



### **MONITORING AND EVALUATION:**

(1) National IPC programme strategy has been developed and disseminated. (2) Implementation of national IPC programme plans, with monitoring and reporting of HCAs. (3) Established national standards and resources for safe health facilities.

<b>BENCHMARK 15.1: National and health facility level infection prevention and control (IPC) programmes are in place</b>	
<b>OBJECTIVE: To have active IPC programmes implemented at national and healthcare facility levels</b>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● An active national IPC programme or operational plan according to WHO minimum requirements is not available or is under development.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Appoint a full time, dedicated and trained IPC focal point at the national level with defined ToRs.</li> <li>● Establish a national IPC working group/committee involving all relevant stakeholders for IPC in health and relevant sectors, with ToRs, including developing a legal framework for the implementation of IPC programmes at the national, subnational and facility levels.</li> <li>● Identify an IPC focal person in health facilities to interact with the national IPC working group/committee.</li> <li>● Develop/adapt national IPC guidelines<sup>92</sup> and SOPs according to the WHO minimum requirements for IPC programmes<sup>93</sup>.</li> <li>● Develop IPC components for the national health emergency preparedness, readiness and response operational plan<sup>94</sup>.</li> <li>● Use the WHO national IPC assessment tool for minimum requirements (IPCAT-MR) to identify and document gaps in the current IPC programme<sup>95</sup>.</li> <li>● Develop evidence-based strategic documents (policies, laws, strategies, etc.) to reinforce responsibility and commitment of the health sector in IPC management at national, subnational and facility levels.</li> <li>● Develop and advocate for a secure dedicated budget for IPC implementation based on plans, informed by local context budget cycles, local political/legal landscape analyses and impact assessments, utilizing local civil society organizations.</li> <li>● Disseminate strategic documents on IPC management to all relevant stakeholders who may provide potential domestic and external sources of funding.</li> <li>● Establish linkages to complementary areas/programmes (e.g. water, sanitation and hygiene (WASH), quality, patient safety).</li> </ul>

<sup>92</sup> Based upon the WHO Guidelines on core components of infection prevention and control programmes at the national and acute healthcare facility level and on the WHO Framework and toolkit for infection prevention and control in outbreak preparedness, readiness and response at the healthcare facility level.

<sup>93</sup> These should include, at minimum: hand hygiene, decontamination of medical devices and patient care articles, environmental cleaning, healthcare waste management, standard and transmission-based precautions, injection safety, healthcare worker protection, aseptic techniques and triage.

<sup>94</sup> Including ToRs to convene a national task force or committee to address IPC preparedness, readiness and response. This task force/committee can be the same committee as described in action 2.

<sup>95</sup> IPCAT-MR will identify precise areas/core components requiring action. Also consider the key elements of other WHO frameworks and toolkits for infection prevention and control in outbreak preparedness, readiness and response at the national level and the healthcare facility level and identify elements requiring action.

Participation and contribution of other sectors to actions:

2, 4, 5, 7, 8

- Identify other sector focal points for services related to IPC in hospitals and community health facilities (such as environment, education, etc.).

## 03 DEVELOPED CAPACITY

- Disseminate national IPC guidelines to all health facilities.
- Design an operational plan, informed by assessment results, following the five step implementation cycle outlined in the WHO Interim practical manual at national level<sup>96</sup> including input from WASH, RCCE and relevant sectors.
- Identify and allocate adequate financial resources for the implementation of the operational plan<sup>97</sup>.
- Appoint IPC committees and trained, dedicated IPC focal points<sup>98</sup> in selected healthcare facilities<sup>99</sup> with defined ToRs.
- Develop a national IPC curricula for new employee orientation, in-service training and national training programme for health workers based on national standards and guidelines. Include IPC modules in specific preservice health-oriented degrees (such as nursing, medicine, etc.).
- Monitor IPC and WASH implementation in selected healthcare facilities<sup>100</sup>.
- Develop a national system for M&E of IPC programmes in health facilities for regular monitoring and periodic evaluation of IPC indicators including implementation of standard precautions (such as hand hygiene, WASH and other related IPC practices).
- Develop and share the IPC and WASH operational plans with national, subnational and local IPC committees and incorporate their feedback/guidance.

<sup>96</sup> Utilizing the Framework and toolkit for IPC in outbreak preparedness, readiness and response at the national level to assist in developing plans for IPC in emergencies including establishment of an IPC task force or committee, plans for surge capacity, training of health workers, budget for supplies, communication plans.

<sup>97</sup> This budget should also include implementation at selected health facilities.

<sup>98</sup> Designated IPC officials at health facility level should be in accordance with WHO core competencies for IPC professionals.

<sup>99</sup> Selected facilities might include referral, regional and/or large tertiary teaching hospitals.

<sup>100</sup> The following tools can be used to support IPC and WASH monitoring in selected facilities: infection prevention and control assessment framework (IPCAF), hand hygiene self-assessment framework (HHSAF), hand hygiene compliance observational tools and/or the complimentary WASH framework improvement tool (WASH FIT) tool.

Participation and contribution of other sectors to actions:

3, 5, 6, 7, 8

- Develop necessary infrastructure and supplies to enable implementation of IPC norms, standards and practices in special settings such as points of entry, industrial plants, waste management companies, sewage systems, schools and other community settings, etc.
- Include the importance of IPC/WASH including hand hygiene techniques, cough etiquette and other IPC measures to be adhered to by citizens and school children/students in all school curricula as appropriate to age.
- Involvement from NGOs and other donor agencies to provide support in developing infrastructure and technical expertise for IPC, particularly at the health facility level, and for the development of a M&E framework for health professionals.
- Use IPC assessment tools at national level (IPCAT2) to identify areas still requiring action and update the operational plan<sup>101</sup>.
- Mandate and support IPC improvement at all health facilities, recommending the use of the IPC assessment framework (IPCAF) and the WASH FIT tool.
- Include specific interventions related to IPC for AMR prevention, tailored to the local epidemiological situation, in operational/action plans.
- Conduct IPC and WASH trainings for health workers at the commencement of employment, at regular intervals throughout employment and at specific trainings for health workers and IPC focal points at all levels and all health facilities.
- Evaluate the status of IPC outbreak preparedness and readiness by organizing SimEx/AAR/IAR (as relevant) to test the functionality of IPC capacities for responding to health emergencies.
- Monitor IPC implementation in all health facilities to evaluate IPC outcomes, with a target of 75% achieving WHO IPC minimum requirements.
- Adjust and increase budgetary allocations, using financial audit and disbursement data, from dedicated budget for IPC implementation, to support activities that require further implementation, additional financial resources and to ensure financial transparency.
- Establish national IPC incident command structures for outbreak emergencies with other ministries and stakeholders.

## 04 DEMONSTRATED CAPACITY

<sup>101</sup> Update and implement operational plans, informed by regular assessment results and following the five-step implementation cycle outlined in the WHO Interim practical manual supporting national implementation of the WHO Guidelines on core components of infection prevention and control programmes. Ensure all recommended IPC priority core components are progressively achieved at the national and facility level according to WHO minimum requirements/action checklists for the priority core components identified. Supplement IPCAF with more detailed analysis and planning on water, sanitation, cleaning and healthcare waste with WASH FIT.

Participation and contribution of other sectors to actions:

2, 4, 5, 7, 8

- Conduct training on WASH and IPC measures in relevant sectors.
- Prioritize and allocate space in the media sector to develop public awareness on roles and responsibilities in IPC in healthcare facilities.
- Develop standards for IPC measures in all relevant settings (outside of health facilities) such as points of entry, industrial plants, schools, community settings, etc.
- Routinely monitor health facility environments for functioning WASH infrastructures and services in relevant.
- Provide sustainable support to health facility IPC programmes at all levels.
- Conduct annual IPC and WASH FIT assessments at healthcare facilities as part of their review cycle to address long term sustainability.
- Conduct continuous monitoring of progress in fulfilling the IPC core components (such as assessments repeated annually or more often), tracking changes and scores to develop a long term improvement plan.
- Analyse and regularly report national IPC and WASH data and support discussion on actions to incorporate lessons learned in a long term improvement plan.
- Revise and update IPC and WASH guidance materials such as strategies, plans, SOPs and training materials, based on lessons learned and ongoing assessment results.
- Evaluate the status of health workers' protection against occupational infections and update as required (plans, SOPs, trainings, etc.).
- Share country experiences in IPC and WASH and participate in international initiatives to strengthen capacities globally.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7

- Conduct regular monitoring and periodic evaluation of good hygiene and infection prevention measures in all relevant settings (outside of health facilities) such as points of entry, industrial plants, school, community settings, etc.
- Regularly update IPC related norms and standards (based on lessons learned) for management of special settings such as points of entry, industrial plants, waste management companies, sewage systems, schools and other community settings, etc. based on normal and special health events in the country or globally.

## 05 SUSTAINABLE CAPACITY

<b>BENCHMARK 15.2: A functioning health care acquired infection (HCAI) surveillance system is in place for public health decision-making</b> <b>OBJECTIVE: To develop and maintain a functioning and effective system for HCAI surveillance (for ongoing surveillance of endemic HCAIs, including AMR pathogens, and for early detection of pathogens prone to infectious disease outbreaks) at national and health facility levels</b>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● National HCAI surveillance system or national strategic plan for HCAIs surveillance, including endemic HCAIs, antimicrobial resistant pathogens and pathogens prone to infectious disease outbreaks, is not available or is under development.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Review the availability and functional status of HCAI surveillance in the country.</li> <li>● Identify the development of a HCAI surveillance system as a priority in national working group/committee for IPC.</li> <li>● Set up a national multidisciplinary technical advisory group for HCAI surveillance, establish a surveillance coordinating centre for HCAI and designate a national reference laboratory.</li> <li>● Design a HCAI surveillance system and designate as a priority action in health sector plans and budgets.</li> <li>● Identify focal points at the national level for HCAI surveillance with linkages to communicable disease, AMR surveillance and WASH monitoring.</li> <li>● Develop a national HCAI surveillance plan that includes standardized definitions and targeted organisms (including AMR pathogens), appropriate methods for surveillance and linkages with existing communicable or integrated disease surveillance systems.</li> <li>● Identify and document minimum resources required to establish HCAI surveillance at the national level and selected tertiary facilities.</li> <li>● Develop training materials for professionals responsible for conducting HCAI surveillance at all health facility levels based on national standards/guidelines.</li> </ul> <p>Participation and contribution of other sectors to actions: 2, 3, 7</p> <ul style="list-style-type: none"> <li>● Identify other sector focal points for developing and maintaining HCAI surveillance.</li> </ul>



## 03 DEVELOPED CAPACITY

- Establish a national HCAI surveillance system as a core component of the national IPC programme, and implement HCAI surveillance (including endemic HCAs, AMR pathogens and pathogens prone to infectious disease outbreaks) in selected tertiary and secondary health facilities in a stepwise manner.
- Develop laboratory capacity and provide resources to identify and report HCAI through a national surveillance system with linkages to communicable disease surveillance systems.
- Include HCAI training into trainings for IPC focal points and relevant health workers within health facilities and conduct trainings regularly.
- Identify and allocate trained staff (or provide training to staff) to develop, implement and maintain HCAI surveillance programme at select health facilities<sup>102</sup>.
- Coordinate with national and subnational surveillance networks that include syndromic and microbiologic surveillance for diseases with outbreak potential.
- Use data for benchmarking purposes (for example, establishing baselines for comparison).
- Provide timely feedback reports to relevant stakeholders on the national situation of HCAI and special events, including recommendations.

Participation and contribution of other sectors to actions:  
2, 7

- Prioritization, by NGOs and other donor agencies, to support establishing HCAI surveillance system and develop technical expertise using national standards/guidelines and associated training materials.

## 04 DEMONSTRATED CAPACITY

- Establish a national HCAI surveillance system (including endemic HCAs, AMR pathogens and pathogens prone to infectious disease outbreaks, through integrated or separate systems) in all secondary and tertiary health facilities.
- Establish an M&E system, including to assess data quality (for example, review of case report forms, microbiology results, denominator determination) and surveillance programme attributes (for example, sensitivity, specificity, user acceptability).
- Collect, analyse and provide feedback based on data from HCAI surveillance system to relevant authorities, including AMR focal points, and update plans and actions as required.
- Establish clear and regular reporting lines from facility to the national level.

<sup>102</sup> Selected facilities might include referral, regional and/or large tertiary teaching hospitals.

- Conduct nationwide training in all facilities on HCAI surveillance for IPC focal points and other health workers responsible at the facility level at regular intervals.
- Identify and support healthcare facilities that are unable to adhere to the HCAI surveillance programme.
- Develop and implement linkages between hospital systems and national microbiology and other laboratory capacities to ensure surveillance, early detection and laboratory surge capacity for the rapid identification of diseases with outbreak potential.

Participation and contribution of other sectors to actions:

3, 7

## 05 SUSTAINABLE CAPACITY

- Establish national networks for HCAI surveillance, also in connection to international networks (such as the European HCAI surveillance networks), as appropriate.
- Continuously document the incidence of patient and healthcare worker infections and the effectiveness of measures to reduce occurrence.
- Revise and update national strategic plans for HCAI surveillance based on data collected/M&E results.
- Use data collected to develop targeted prevention efforts, evaluate impact and re-evaluate on a regular basis.
- Regularly identify champion hospitals for adherence to HCAI surveillance standards including infections caused by emerging and/or antimicrobial resistant pathogens among humans and ensure feedback is given in a national forum (i.e. reports including data analyses, recommendations, highlights of special events, outbreaks and control measures, etc.).
- Share country experience in HCAI surveillance and participate in international initiatives to strengthen capacities globally.

BENCHMARK 15.3: Provide a safe environment in all healthcare facilities	
OBJECTIVE: To ensure a safe environment in all healthcare facilities for health workers, patients, caregivers, visitors and any other service provider/user	
CAPACITY LEVEL	BENCHMARK ACTIONS
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● National standards and resources for an environment enabling IPC (such as WASH, screening, triage, isolation areas and sterilization services in healthcare facilities), including appropriate infrastructure, materials and equipment are not available or are under development.</li> <li>● Standards for reduction of workload and overcrowding for optimization of staffing levels in healthcare facilities are not available or under development.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Review international guidelines<sup>103</sup> and the current national status of healthcare facilities in relation to water, sanitation, hygiene, cleaning, waste and energy services and document gaps or areas for improvement<sup>104</sup>.</li> <li>● Identify and document gaps in WHO core components for IPC programmes number seven and eight and develop national plan for a safe built environment (core component 8) and overcrowding and optimization of staff levels (core component 7)<sup>105</sup>.</li> <li>● Define standards for IPC and WASH both in hospital and community (primary) health care settings<sup>106</sup>.</li> <li>● Develop training materials based on national guidelines and standards for the development of a safe built environment, including when to start and stop isolation of patients, donning and doffing PPE and engineering and environmental controls.</li> <li>● Develop norms and standards in developing the safe built environment of healthcare facilities in relation to IPC, with special reference to crowd control measures, triage facilities, isolation rooms, ventilation, sewerage facilities, waste management, etc.</li> </ul> <p>Participation and contribution of other sectors to actions: 1, 2, 3, 4, 5</p>

<sup>103</sup> Including WHO guidelines on environmental services in healthcare, drinking water safety, sanitation, healthcare waste as well as the WHO core components of IPC programmes at acute health care facility level for recommendations on core component seven (workload, staffing and bed occupancy at the facility level) and eight (built environment, materials and equipment for infection prevention and control at the facility level). Include consideration of the WHO Minimum requirements for infection prevention and control programmes and relevant chapters in the WHO Interim practical manual supporting national implementation of the WHO Guidelines on core components of infection prevention and control programmes.

<sup>104</sup> Including referring to latest WHO/UNICEF national estimates.

<sup>105</sup> The development of this plan should be done using the WHO IPC assessment tool for minimum requirements at the facility level (IPCAF-MR for primary, secondary and tertiary levels respectively) alongside WHO/UNICEF/WASH Fit tools. These plans should also clearly identify roles and responsibilities of key staff and/or community members.

<sup>106</sup> These standards should be based on the WHO Minimum requirements for infection prevention and control programmes and WHO standards on drinking water, sanitation, and healthcare waste. Develop and disseminate SOPs to implement these standards, including checklists.

## 03 DEVELOPED CAPACITY

- Implement the WHO IPCAF component eight minimum requirements for a safe built environment<sup>107</sup>.
- Mandate and support IPC improvement at all healthcare facilities, based on assessment results using the IPCAF and complementary WASH FIT tools or national equivalents and use standard checklists to monitor the safety of the hospital environment at regular intervals and take corrective measures.
- Update national building standards, standards for safe water, sanitation, hygiene, waste and clean energy services for healthcare facilities to enable compliance with IPC measures.
- Identify, document and practice minimum requirements for staffing, workload and bed occupancy standards to ensure IPC at healthcare facilities.
- Establish hand hygiene facilities to adhere to hand hygiene requirements in both hospitals and community healthcare facilities.

Participation and contribution of other sectors to actions:

1, 2, 3, 5

- Support, by NGOs and other donor agencies, to develop infrastructure and technical expertise for IPC.
- Establish and maintain sufficient supply of logistics to allow for a safe environment at health facilities.
- Organize procurement and make available a sufficient quantity of PPE, hygiene and disinfection products and other IPC related supplies for health workers<sup>108</sup>.
- Develop more advanced standards for water and sanitation services in healthcare facilities, including considering low carbon and environmentally sustainable healthcare facility standards.
- Identify gaps and implement improvement actions in selected reference health facilities for safety in relation to WASH and energy services, built logistics, human resources and equipment and report to higher authorities to take corrective action using IPC assessment and WASH tools.
- Update national and facility IPC action plans based on identified gaps and priority action areas.
- Routinely monitor and evaluate health facility environment to ensure that patient care activities are conducted in a clean and/or hygienic environment, as well as the existence of functioning WASH infrastructures and services, appropriate IPC materials and equipment, and an adequate number and appropriate positioning of hand hygiene facilities, etc.

<sup>107</sup> Water, sanitation, hygiene, waste and energy services in healthcare facilities, including appropriate infrastructure, materials, regular budget and equipment for IPC as well as standards for reduction of overcrowding and optimization of staffing levels in healthcare facilities in stepwise manner.

<sup>108</sup> Work to reduce unnecessary and overuse of PPE (e.g. hand hygiene rather than gloves when not indicated) and reduce environmental impact of waste.

- Clearly outline requirements for PPE and supplies (including cleaning supplies and equipment, alcohol based hand rub, soap, etc.), and establish contingency plans in the event of supply shortages.

Participation and contribution of other sectors to actions:

3, 7

## 05 SUSTAINABLE CAPACITY

- Update health facility level plans regularly based on lessons learned and gap analysis/evaluations to identify priority areas and monitor progress.
- Implement minimum requirements for a safe built environment, materials and equipment for IPC at the facility level at all levels, supported by a sustainable funding mechanism.
- Provide sustainable financial and other support to healthcare facility IPC programmes at all levels.
- Prioritize a sustainable budget for hospital safety in relation to IPC.
- Prioritize funding to ensure safety and quality standards of environment in healthcare facilities in relation to IPC by domestic funds and donor funding mechanisms.
- Identify and document best practices/lessons learned, and engage the country in peer-to-peer learning programmes at the subnational, national and international levels.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6

### Tools:

- Guidelines on Core Components of Infection Prevention and Control Programmes at the National and Acute Health Care Facility Level. Geneva: World Health Organization; 2016 (<https://www.who.int/publications/i/item/9789241549929>).
- Interim Practical Manual: supporting national implementation of the WHO Guidelines on Core Competencies of Infection Prevention and Control Programmes. Geneva: World Health Organization; 2017 (<https://www.who.int/publications/i/item/WHO-HIS-SDS-2017-8>).
- Core components for infection prevention and control programmes (implementation tools and resources). Geneva: World Health Organization; 2023 (<https://www.who.int/teams/integrated-health-services/infection-prevention-control/core-components>).
- Minimum requirements for infection prevention and control programmes. Geneva: World Health Organization; 2019 (<https://www.who.int/publications/i/item/9789241516945>).

- Global Antimicrobial Resistance and Use Surveillance System (GLASS) [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/initiatives/glass>).
- Diagnostic stewardship: a guide to implementation in antimicrobial resistance surveillance sites. Geneva: World Health Organization; 2016 (<https://www.who.int/publications/i/item/WHO-DGO-AMR-2016.3>).
- Infection prevention and control assessment framework at the facility level. Geneva: World Health Organization; 2018 (<https://www.who.int/publications/i/item/WHO-HIS-SDS-2018.9>).
- Instructions for the national infection prevention and control assessment tool 2 (IPCAT2). Geneva: World Health Organization; 2017. (<https://apps.who.int/iris/handle/10665/330078>).
- Assessment tool of the minimum requirements for infection prevention and control programmes at the national level. Geneva: World Health Organization; 2021 (<https://www.who.int/publications/m/item/assessment-tool-of-the-minimum-requirements-for-infection-prevention-and-control-programmes-at-the-national-level>).
- Hand Hygiene Self-Assessment Framework. Geneva: World Health Organization; 2010 (<https://www.who.int/teams/integrated-health-services/infection-prevention-control/hand-hygiene/monitoring-tools>).
- Global action plan on antimicrobial resistance. Geneva: World Health Organization; 2016 (<https://www.who.int/publications/i/item/9789241509763>).
- National systems to support drinking-water, sanitation and hygiene: global status report 2019. UN-Water global analysis and assessment of sanitation and drinking-water (GLASS) 2019 report. Geneva: World Health Organization; 2019 (<https://www.unwater.org/publications/un-water-glaas-2019-national-systems-support-drinking-water-sanitation-and-hygiene>).
- Compendium of WHO and other UN guidance on health and environment [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/tools/compendium-on-health-and-environment>).
- Framework and toolkit for infection prevention and control in outbreak preparedness, readiness and response at the national level. Geneva: World Health Organization; 2021 (<https://www.who.int/publications/i/item/9789240032729>).
- Policy brief for the legal framework on infection prevention and control. Addis Ababa: Africa CDC and African Union; 2022 (<https://africacdc.org/download/policy-brief-for-the-legal-framework-on-infection-prevention-and-control/>).
- Core competencies for infection prevention and control professionals. Geneva: World Health Organization; 2020 (<https://www.who.int/publications/i/item/9789240011656>).
- WASH FIT: a practical guide for improving quality of care through water, sanitation and hygiene in health care facilities. Second edition. Geneva: World Health Organization; 2022 (<https://www.who.int/publications/i/item/9789240043237>).



- WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene (JMP) [website]. World Health Organization and UNICEF (<https://washdata.org/>).
- Simulation exercises [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/emergencies/operations/simulation-exercises>).
- WHO simulation exercise manual: a practical guide and tool for planning, conducting and evaluating simulation exercises for outbreaks and public health emergency preparedness and response. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254741>).
- Guidance for after action review (AAR). Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/311537>).
- Guidance for conducting a country COVID-19 intra-action review. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/333419>)



## Risk communication, community engagement & infodemic management

Risk communication, community engagement and infodemic management share a focus on effective communication, co-design, community involvement, addressing misinformation, empowering individuals, building trust and fostering collaboration. By integrating these capacities into health systems, States Parties can enhance overall preparedness and response to outbreaks and emergencies and ensure that emergency functions are effectively implemented. Effective and integrated risk communication, community engagement and infodemic management is driven by coherent and coordinated health communication and community participation systems with clearly defined mechanisms, functions and dedicated resources to support key activities, and are often supported by the same system. Key activities include internal and partner communication, multistakeholder and community engagement, participatory risk assessment and community planning, community/local testing of plans and operational structures, social listening, rumour management, community-level early warning systems, and strategies for tackling mis- and disinformation.

### Risk communication

Risk communication is the real-time exchange of information, advice and opinions between experts or officials and people who face health threats. Risk communication enables people to make informed decisions to mitigate the effects of a threat and take protective and preventive measures. Timely and effective dialogue between concerned authorities, stakeholders and the population at risk is multisectoral, leverages existing functions, includes proactive dissemination of information, social listening, and adapts approaches based on community feedback. Risk communication approaches and strategies consider the social, religious, cultural, political and economic context in which threats occur, with dissemination through appropriate and trusted channels (e.g. media, social media, mass awareness campaigns, health promotion platforms, social mobilization, stakeholders and trusted community leaders) to support uptake among target populations. . .



#### IMPACT:

Effective risk communication guides people to better understand risks they face and make informed decisions about how to mitigate effects of risks and how to take protective and preventive measures. Messages and interventions are shaped by social and contextual realities, and authorities and experts listen to and address people's concerns and needs so advice is relevant, tailored and timely.



## MONITORING AND EVALUATION:

(1) Formal multisectoral risk communication plans, arrangements and systems are in place. (2) Coordination mechanisms for internal and partner communication, data exchange and shaping of the information environment exist and are functional. (3) Risk communication materials are culturally appropriate and acceptable to target populations, regularly updated and disseminated rapidly through appropriate channels. (4) Communication mechanisms have been established with at-risk populations at the community level.

## Community engagement

Health security can only be achieved when health systems work with resilient communities. Resilient communities have the capacity to report all available essential information to the appropriate level of healthcare response, rapidly implement preliminary control measures, coordinate with health systems and co-create solutions as the emergency evolves.

Community engagement develops relationships and structures for stakeholders to work together to promote well-being, achieve positive health outcomes and empower communities to lead, plan and implement initiatives. Community engagement builds resilient communities by implementing relevant policies, enabling legislation, providing resources, providing quality services, mobilizing expertise and maximizing community capacities with long-term commitment and investment. Sustained community engagement with the health system co-develops solutions and adapts and localizes health emergency programmes by working collaboratively with groups of people affiliated by geographic proximity, identity, ways of communication, shared interest or similar situations, or health conditions. National emergency preparedness, readiness and response structures should be designed with community-centred approaches integrated within national coordination mechanisms. Community engagement includes additional benchmarks 16B.2 and 16B.3.



## IMPACT:

Community engagement supports two-way communication for localized and effective preparedness initiatives and response operations and encourages individual and population behaviour change. Community engagement contributes to raising and maintaining trust towards local authorities, health providers, public health measures and response actors. Community engagement across the health emergency cycle enables the design of solutions that are owned by communities, underpinned by local practices, values and norms, and strengthen local health systems to prevent, detect and respond to health emergencies.



### MONITORING AND EVALUATION:

- (1) Community engagement is integrated in the development and implementation of national and local health emergency management plans.
- (2) Local actors including government, primary health care, community organizations and partners play an active role in community engagement for health emergency management and provision of EHS.
- (3) Capacity of local officials and community volunteers to contribute to planning, implementation and monitoring of health preparedness and response efforts.

## Infodemic management

Infodemic management monitors the information environment that communities live in to understand how it shapes their perceptions and health behaviours. Health workers and health systems can also be impacted by infodemic harms, such as loss of public trust, stigmatization or violence against health workers and by patients delaying care-seeking or taking non-approved treatments. Infodemic harms can be addressed and resilience can be built in communities and health systems against health misinformation by rapidly addressing precursors and components such as questions, concerns, information voids, and circulating narratives.

In today's increasingly connected world, health information is shared rapidly and amplified through digital channels while also influencing offline conversations, traditional media news cycles or less-digitally connected communities. In this evolving information environment, individuals can access many sources of health information beyond public authorities. Health misinformation narratives can often take advantage of the dynamics and design of the information environment, such as algorithms and content moderation policies of internet platforms and varying levels of digital, media and health literacy among readers. Infodemic management strategies are relevant to all levels of society, including health systems, to help reduce impacts of health emergencies at individual, community, health system and societal levels by using a deep understanding of the underlying reasons how and why narratives gain traction and become part of broader social conversations. Infodemic management includes additional benchmark 16C.1.



### IMPACT:

Effective infodemic management supports health systems to prepare and proactively prevent the harm infodemics can cause during an emergency when information, confusion, questions, concerns, information voids and narratives surge in communities. Infodemic monitoring analyzes diverse data sources such as social listening, health information systems and partners (e.g. factcheckers), to identify and implement misinformation resilience strategies and rapidly meet people's information and service needs during a health emergency. Infodemic insights identify strategies and structures that can strengthen resilience of the health system, health workers or communities to health misinformation. During an outbreak,

rapid infodemic insights inform faster response to the questions, concerns and needs people express in different communities of focus. Insights support the promotion of health information equity and tailoring of emergency response strategies, health policy, health guidance, treatments, diagnostics, vaccines, public health and social measures (PHSM), engagement, communication and service delivery.



### **MONITORING AND EVALUATION:**

(1) Existence of formal infodemic management plans and SOPs as well as arrangements and systems for routine development, gathering and use of infodemic insights for preparedness, prevention and response in emergencies, including in vulnerable communities. (2) Infodemic management function is formalized as part of emergency preparedness and prevention plans and is coordinated across all stakeholders disseminating health information, evidence or guidance. (3) Networks and rosters exist for surge capacity to support infodemic management and digital provision of accurate and reliable health information during a health emergency. (4) The information environment is mapped at national and subnational levels and routine data sources are identified within and outside the health system for inclusion in routine infodemic monitoring and data sharing and policies are put in place for privacy and governance considerations.

## Risk communication

**BENCHMARK 16A.1: Risk communication and community engagement (RCCE) systems with mechanisms for functions and resources are in place and integrated within broader health emergency programmes**

**OBJECTIVE: To build and strengthen a system for timely, effective, relevant and tailored communication of risk before, during and after health emergencies, enabling those affected to take protective, preventative and supportive actions.**

CAPACITY LEVEL	BENCHMARK ACTIONS
<p><b>01</b> NO CAPACITY</p>	<ul style="list-style-type: none"> <li>● Mechanisms for RCCE functions and resources including behavioural and cultural insights, are under development or implementation and coordination of RCCE activities are conducted on an ad hoc basis</li> </ul>
<p><b>02</b> LIMITED CAPACITY</p>	<ul style="list-style-type: none"> <li>● Develop and test systems<sup>109</sup> for the implementation of RCCE, including mechanisms for community and multisectoral engagement and infodemic management.</li> <li>● Identify dedicated RCCE focal points and appoint spokespersons<sup>110</sup> at national and subnational levels.</li> <li>● Establish coordination mechanisms<sup>111</sup> with relevant sectors including ministries, partners and other stakeholders at national and subnational levels.</li> <li>● Develop a national multihazard emergency RCCE plan and policy<sup>112</sup> based on IHR requirements and priority risks, for at least three priority risks.</li> <li>● Develop a budget and forecast human and financial resource needs for activating RCCE plans during a health emergency.</li> <li>● Develop<sup>113</sup> RCCE training packages.</li> <li>● Develop and test mechanisms to support data to drive RCCE action<sup>114</sup>.</li> </ul>

<sup>109</sup> Define governance and leadership mechanisms for RCCE by mapping people or units responsible for RCCE and define ToRs for joint working.

<sup>110</sup> Develop a contact list of RCCE focal points and plan to keep the list updated. Set up meetings and networking platforms for RCCE focal points and focal points from other areas such as surveillance, risk assessment and health programmes.

<sup>111</sup> Agree and map coordination mechanisms, for example, to clarify roles, to map communication flows and set up SOPs between units, agencies/organizations.

<sup>112</sup> Define the country's vision, policy and strategic commitment to RCCE and map key stakeholder groups, including at risk communities. Define key activities and channels for engagement and readiness activation mechanisms.

<sup>113</sup> Target RCCE training based on assessment of existing capacities and needs within key stakeholder groups, including government ministries, health staff, frontline health officials, community health workers, social mobilizers, community engagement practitioners and key partner agencies.

<sup>114</sup> Such as SOPs for routine analyses of target audiences based on online and offline social listening, MoUs with providers of technology for message development, surveys or rapid qualitative studies for identification of local perceptions and concerns.

	<p>Participation and contribution of other sectors to actions: 1, 2, 3, 4, 5, 6, 7</p> <ul style="list-style-type: none"> <li>● Identify data sources within relevant sectors and develop partnerships with public health sector to collect and share data and evidence to strengthen RCCE policy and practice.</li> </ul>
<p><b>03</b> <b>DEVELOPED</b> <b>CAPACITY</b></p>	<ul style="list-style-type: none"> <li>● Apply systems for the implementation of RCCE, including mechanisms for community and multisectoral engagement and infodemic management.</li> <li>● Expand networks and reinforce communication channels between RCCE focal points, including within the health ministry and relevant sectors for health emergencies and across different functions of an emergency response<sup>115</sup>.</li> <li>● Implement mechanism for data to drive RCCE action at the national level.</li> <li>● Develop and test SOPs, guidelines, agreements and/or MoUs for effective coordination of RCCE and infodemic management among relevant key stakeholders at national and subnational levels.</li> <li>● Review<sup>116</sup>, test<sup>117</sup> and update national multihazard emergency RCCE plans and policies based on IHR requirements for all priority risks.</li> <li>● Organize and conduct trainings for staff at national and subnational levels to raise awareness about the importance of risk communication, review and adapt trainings based on capacity-building needs<sup>118</sup>.</li> <li>● Build a network with specific communities such as education, faith based, arts/culture, employers, etc., to coordinate RCCE and infodemic management activities, adapt messages and guidance.</li> <li>● Establish M&amp;E systems to evaluate the implementation of risk communication and infodemic management activities during health emergencies, including rapid approaches that enable intervention adaptation to improve outcomes.</li> </ul> <p>Participation and contribution of other sectors to actions: 1, 2, 3, 4, 5, 6, 7, 8</p> <ul style="list-style-type: none"> <li>● Identify focal points for risk communication within relevant sectors and share infodemic insights to ensure harmonization of communication messages across sectors.</li> </ul>

<sup>115</sup> Including surveillance, laboratory, patient care, infection prevention and control, logistics, human resources, planning, budgeting and finance.

<sup>116</sup> Review national multihazard plans to include all priority risks and to align relevant existing policies, legislation and legal frameworks.

<sup>117</sup> Test and improve capacities, resources and activation mechanisms for operational readiness through tabletop exercises or SimEx for different priority threats.

<sup>118</sup> Including capacity-building on effective communication, behaviour change communication, communication for behavioural impact, social marketing techniques, drafting media communications, developing information, education and communication materials, and social listening.



## 04 DEMONSTRATED CAPACITY

- Allocate dedicated resources for an effective RCCE system, including skilled personnel, volunteers and financial resources to form dedicated teams with a budget for implementing activities at the national and subnational levels.
- Create a repository of tools, products, templates and mechanisms for the rapid development of new products as needed.
- Expand networks and mechanisms for systematic exchange between the RCCE function and other essential functions of an emergency response<sup>119</sup>, health system<sup>120</sup> and outside the health system<sup>121</sup>.
- Implement mechanisms for data to drive RCCE action at the subnational level, using evidence of best practices in routine collection of data and analyses to inform practice.
- Expand M&E systems to evaluate the implementation of risk communication and infodemic management activities during health emergencies, including rapid approaches that enable intervention adaptation to improve outcomes at the subnational level.
- Conduct SimEx/AAR/IAR (as relevant) to test plans including SOPs, guidelines, agreements and/or MOUs for effective RCCE coordination among relevant key stakeholders and identify and address gaps in capacity, coordination and resources at national and subnational levels.
- Update training needs based on outcomes of M&E activities that identify capacity gaps.
- Engage communities such as employers/unions, faith based, arts/culture, hospitality/tourism, transport, universities, entertainment, etc. in RCCE activities.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8

<sup>119</sup> Such as surveillance, laboratory, patient care, infection prevention and control, logistics, human resources, planning, budgeting and finance.

<sup>120</sup> Such as immunization registries, routine infectious disease surveillance systems, health care, etc.

<sup>121</sup> Such as mobility data from telecommunication companies, engagement and search metrics from internet platforms, etc.

<sup>122</sup> For example, strengthening infrastructure for routine, rapid evidence generation and evidence synthesis to inform practice, drive intervention development and identify factors that influence transferability to other and similar contexts.



## 05 SUSTAINABLE CAPACITY

- Sustain domestic budget line and appropriate budget for RCCE national and subnational level activities throughout the emergency life cycle.
- Document and disseminate evidence and data driven approaches to inform RCCE action .
- Update/amend existing policies, legislation and legal basis for RCCE for health emergencies and unusual events based on lessons learned.
- Use the results of RCCE evaluations to systematically improve programmes, practices and interventions.
- Maintain a regular coordination mechanism between agencies, organizations and key stakeholders at national and subnational levels, including conducting SimEx/AAR/IAR (as relevant) and simulation trainings.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5

<b>BENCHMARK 16A.2: Mechanisms to deliver quality, timely, impactful risk communication are operational</b> <b>OBJECTIVE: To implement strong risk communication practices with community involvement for preparedness, readiness and response to health emergencies to enable populations at risk to take protective, preventative and supportive actions.</b>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● Mechanisms for public communication are under development or implemented on an ad hoc basis by non-specialist professionals with a near exclusive focus on conventional media.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Establish an advisory committee including representatives from health and other relevant sectors and develop a mechanism to coordinate communication among subnational, national and international stakeholders<sup>123</sup>.</li> <li>● Set up mechanisms for risk communication messages, products and intervention development including process and engagement of trained teams linked with relevant technical focal points<sup>124</sup>.</li> <li>● Identify mechanisms for social listening and community feedback and collate with existing materials for RCCE to drive action<sup>125</sup>.</li> <li>● Map mainstream national and local media (all types) and social media platforms and develop networks.</li> <li>● Develop a media engagement strategy, involving stakeholders from the media sector including social media.</li> </ul>
<b>03</b> <b>DEVELOPED CAPACITY</b>	<p>Participation and contribution of other sectors to actions: 1,2, 3, 4, 5</p> <ul style="list-style-type: none"> <li>● Test the mechanism to coordinate communication among stakeholders and apply it during emergencies at the national level across emergency response areas.</li> <li>● Engage and train community leaders, champions, CSOs, religious and traditional leaders, and others for risk communication at national and subnational levels.</li> </ul>

<sup>123</sup> Including the health ministry and internal stakeholders, hospitals partners, civil society groups (including female oriented organizations), private sector, nongovernmental organizations, religious and traditional leaders, etc.

<sup>124</sup> Identify and engage with a trained team for message development, message clearance in collaboration with relevant focal points, message testing, creative content development, artwork and dissemination in health emergencies and unusual events. Identify a mechanism to coordinate messages with other response areas (such as surveillance, laboratory, patient care, infection prevention and control, logistics, human resources, planning, budgeting, and finance).

<sup>125</sup> Such as online and offline social listening, surveys or rapid qualitative studies for identification of local perceptions and concerns.

- Establish and test feedback mechanisms for risk communication such as a hotline or call centre<sup>126,127</sup> to activate within 24 hours of an emergency at the national level.
- Develop and disseminate risk communication products in different formats and relevant local languages based on information from RCCE to drive action at the national level.
- Test and apply different modes of communication to reach different groups of audiences using different communication channels<sup>128</sup>.
- Implement media engagement strategy and build partnerships with media networks<sup>129</sup> at the national level.
- Conduct training for appointed spokespersons on risk communication on a regular basis.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7

## 04 DEMONSTRATED CAPACITY

- Implement the coordination mechanism among stakeholders during a health emergency at the national and subnational levels.
- Establish and test feedback mechanisms for risk communication such as a hotline or call centre to activate within 24 hours of an emergency at the subnational level.
- Review and identify gaps and vulnerabilities in established networks of trusted community leaders and champions<sup>130</sup> at the subnational level.
- Develop and disseminate risk communication products in different formats and relevant local languages based on information from RCCE to drive action<sup>131</sup> at the subnational level.
- Implement media engagement strategies and build partnerships with media networks at the subnational level.

<sup>126</sup> To respond to questions from the community, disseminate official risk communication messages and collect information.

<sup>127</sup> Such as a SOP for a referral system through the call centre, MoUs with relevant telecommunication partners, training material and training schedules for operators of the national public health emergency call centre and, language mapping for call centres to answer calls in priority local languages based on the country's demography.

<sup>128</sup> Communication networks, platforms, methods, modes such as face-to-face meetings, print materials, local announcement through public addressing systems, online, TV or radio, telephone messages or as a ringing tone, etc.

<sup>129</sup> Such as online anti-misinformation communities, factcheckers, science communication groups, journalists and key focal points to develop engagements built on mutual understanding, credibility and to establish trust.

<sup>130</sup> Such as religious leaders, traditional healers and community networks.

<sup>131</sup> Including those based on systematic online and offline daily media monitoring and compiling and analyzing feedback and reports to spokespersons and other relevant authorities before, during and after emergencies.

- Identify and involve journalists representing all media stations and key focal points from relevant media outlets and engage regularly<sup>132</sup> in ways that build mutual understanding, trust and credibility.
- Develop mechanisms to monitor risk communication messages developed and shared by key stakeholders at national and subnational levels.
- Conduct SimEx/AAR/IAR (as relevant) for risk communication to identify the level of implementation of risk communications plans, identify gaps and best practices.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8

- Implement agreed and tested processes by priority sectors, including government, private, non-governmental organizations (NGOs), development partners and CSOs, to work with the health sector to disseminate risk communication messages to the community.
- Support the health ministry for surge support as needed in identifying community questions and needs, tailoring and testing messages, and amplifying message reach and uptake.

## 05 SUSTAINABLE CAPACITY

- Evaluate the coordination mechanism for risk communication and sustain engagement with stakeholders including media.
- Update media engagement strategies, feedback mechanisms and usage of hotlines or call centres based on results from M&E activities.
- Update risk communication plans based on results of SimEx/AAR/IAR (as relevant) on a regular basis.
- Sustain data driven mechanisms for risk communication product and intervention development<sup>133</sup>.
- Document and disseminate best practices and lessons learned.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5

<sup>132</sup> e.g. in-person briefings, targeted press releases, press conferences, media seminars, etc.

<sup>133</sup> Routinely use data collected through online and offline social listening systems or formative research to drive risk communication messages testing and other product development. Proactively advance mechanisms for evidence and data driven approaches to inform RCCE action. For example, evidence syntheses to inform strategy and to influence the transferability of best practices to other settings.

## Tools:

- WHO guidance on Risk Communication [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/emergencies/risk-communications/guidance>).
- Communicating Risk in Public Health Emergencies: a WHO guideline for emergency risk communication (ERC) policy and practice. Geneva: World Health Organization; 2018 (<https://www.who.int/publications/i/item/9789241550208>).
- Risk communication and community engagement (RCCE) [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/emergencies/risk-communications>).
- The Collective Service. For a Community-led Response [website]. British Red Cross Collective Service; 2022 (<https://www.rcce-collective.net/>).
- World Health Organization strategy for engaging religious leaders, faith-based organization and faith communities in health emergencies. Geneva: World Health Organization; 2021 (<https://apps.who.int/iris/handle/10665/347871>).
- Simulation exercises [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/emergencies/operations/simulation-exercises>).
- WHO simulation exercise manual: a practical guide and tool for planning, conducting and evaluating simulation exercises for outbreaks and public health emergency preparedness and response. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254741>).
- Guidance for after action review (AAR). Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/311537>).
- Guidance for conducting a country COVID-19 intra-action review. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/333419>).

## Community engagement

**BENCHMARK 16B.1: Community engagement is integrated and prioritized within the management of health emergencies and unusual events**

**OBJECTIVE: To systemically integrate and prioritize community engagement into relevant policies, programmes, frameworks and infrastructure, and actively involve communities in the codesign and implementation of interventions for management of health emergencies**

CAPACITY LEVEL	BENCHMARK ACTIONS
<p><b>01</b> <b>NO CAPACITY</b></p>	<ul style="list-style-type: none"> <li>● Mechanisms for community engagement in health emergencies, including policies, plans, guidelines, programmes and/or SOPs, are in development.</li> <li>● Community engagement activities are largely one way information sharing activities and limited to disease control programmes.</li> <li>● Community engagement efforts are not systematically linked to the emergency response.</li> </ul>
<p><b>02</b> <b>LIMITED CAPACITY</b></p>	<ul style="list-style-type: none"> <li>● Identify unit/focal point within the health emergency management office or health ministry equivalent, with ToRs to coordinate efforts for community engagement in health emergencies with relevant units/departments, programmes and sectors and for social mobilization, health promotion or community engagement for emergency response.</li> <li>● Form a multisectoral and multiagency national working group/steering committee to streamline and prioritize community engagement efforts for health emergencies across relevant sectors.</li> <li>● Review available policies, legislation, plans, guidelines and frameworks relevant to health emergencies across relevant sectors to identify the level of inclusion of community engagement, and to identify and document gaps.</li> <li>● Conduct contextual analysis considering cultural, political, social, economic and geographic factors to develop/update community engagement strategy/guidelines/SOPs for health emergencies.</li> <li>● Identify and list trusted community engagement advocates, influencers and key stakeholder groups at the national level for health emergencies across relevant sectors.</li> <li>● Define and integrate the roles of communities and civil society in health emergency strategies/plans and establish a mechanism for community participation in decision making and actions to prepare for and respond to health emergencies<sup>134</sup>.</li> <li>● Conduct baseline surveys to provide information<sup>135</sup> on a population's risk or ability to withstand common hazards.</li> </ul>

<sup>134</sup> Including consultations/gathering feedback from communities.

<sup>135</sup> Mapping languages, living conditions, religious and cultural practices, trust channels of communication, influencers, etc.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7

- Identify focal points in relevant sectors for consultation and coordination during emergencies to support community engagement activities.
- Develop, test and disseminate national protocol for community mobilization for health emergencies<sup>136</sup> along with an identified mechanism for dedicated community engagement teams to reach out to affected or at risk populations during emergencies.
- Identify focal points and define the roles of subnational and local governments and primary health care staff to ensure community engagement in health emergencies, including for community level detection, early warning, logistics management, etc.
- Map key stakeholders such as community leaders, faith based organizations and civil society to contribute to the development and implementation of health emergency preparedness and response plans.
- Conduct participatory community risk assessment, context analysis, hazard mapping, health profiling, vulnerability mapping, capacity assessment, context analysis and readiness planning in priority communities through inclusive approaches with involvement of NGOs, CSOs and CBOs and networks.
- Develop and test a mechanism for communities to be actively involved in emergency response and codesign of emergency response initiatives.
- Establish formal/informal, ongoing feedback mechanisms before, during and after emergencies between at risk or affected populations and response authorities with special reference to vulnerable and marginalized groups<sup>137</sup>.
- Integrate community engagement in the M&E framework for health emergencies and outbreak response at all levels (including SimEx/AAR/IAR, as relevant).
- Train community engagement teams, including volunteers, regularly on community engagement before, during and after emergencies and establish surge capacity mechanisms for community engagement.
- Advocate and practice community engagement and public-private-people partnership mechanisms with CSOs, CBOs and NGO networks for emergency response at the national level.

## 03 DEVELOPED CAPACITY

<sup>136</sup> Preparedness, prevention and response to outbreaks and other hazards or emergencies (such as involvement in early warning and detection, immediate notification and containment, contact tracing, specimen collection and referral), and translate messages into major country languages.

<sup>137</sup> Such as linkages with hotlines, social behaviour research, direct communication platforms, etc.



	<p>Participation and contribution of other sectors to actions:</p> <p>1, 2, 3, 4, 5, 6, 7, 8, 9</p> <ul style="list-style-type: none"> <li>● Integrate community engagement mechanisms into existing national DRR and emergency response frameworks.</li> </ul>
<p><b>04</b> <b>DEMONSTRATED</b> <b>CAPACITY</b></p>	<ul style="list-style-type: none"> <li>● Implement national protocol for community mobilization for health emergencies at all levels.</li> <li>● Involve communities to codesign and implement emergency management initiatives<sup>138</sup>.</li> <li>● Allocate a dedicated budget for community engagement for health emergencies, including outbreak preparedness and response, at all levels.</li> <li>● Monitor community engagement with target communities before, during and after emergencies and community trust related indicators as part of M&amp;E for health emergencies and outbreak response at all levels.</li> </ul> <p>Participation and contribution of other sectors to actions:</p> <p>1, 2, 3, 4</p>
<p><b>05</b> <b>SUSTAINABLE</b> <b>CAPACITY</b></p>	<ul style="list-style-type: none"> <li>● Update existing plans, guidelines and SOPs for community engagement based on lessons learned and best practices from SimEx/AAR/IAR (as relevant).</li> <li>● Revise legal frameworks and policies on how local governments can engage with CSOs/CBOs for community engagement at the community/local level to support emergency preparedness and response.</li> <li>● Include community stakeholders in the planning and conduct of SimEx/AAR/IAR (as relevant) for local emergencies.</li> <li>● Share experiences and best practices on community engagement in health emergencies through peer-to-peer learning programmes at the subnational, national and international levels.</li> <li>● Document and publish research to reflect experiences and lessons learned in community engagement throughout the health emergency cycle.</li> </ul> <p>Participation and contribution of other sectors to actions:</p> <p>1, 2, 3, 4, 5</p>

<sup>138</sup> Initiatives include local or district plans e.g. readiness, contingency, response and business continuity plans. Codesign and implementation shall include stakeholders such as community leaders, faith based organizations and civil society, which are mapped and systematically engaged throughout the process.

## Tools:

- Minimum Quality Standards and Indicators in Community Engagement. Amman: UNICEF Middle East and North Africa; 2020 (<https://www.unicef.org/mena/reports/community-engagement-standards>).
- Community engagement: a health promotion guide for universal health coverage in the hands of the people. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/334379>).
- World Health Organization, Food and Agriculture Organization of the United Nations & United Nations Children's Fund (UNICEF). Communication for behavioural impact (COMBI): a toolkit for behavioural and social communication in outbreak response. Luxembourg: World Health Organization; 2012 (<https://apps.who.int/iris/handle/10665/75170?ua=1>).
- Social + Behavioural Change [website]. New York, United States of America: UNICEF; 2023 (<https://www.sbcguidance.org/>).
- Clinical and Translational Science Awards Foundations for Accelerated Discovery and Efficient Translation. Principles of Community Engagement (Second Edition) Progress Report 2009-2011. United States of America: National Institutes of Health (NIH), Department of Health and Human Services and USA Government; 2011 ([https://ncats.nih.gov/ctsa\\_2011/ch5\\_v2.html](https://ncats.nih.gov/ctsa_2011/ch5_v2.html)).
- Engagement of crisis-affected people in humanitarian action. Background Paper. Addis Ababa: ALNAP; 2014 (<https://reliefweb.int/report/world/engagement-crisis-affected-people-humanitarian-action-background-paper>).
- WHO Community Engagement Framework for Quality, People-centred and resilient health services. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/259280>).
- WHO Faith Network [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/groups/who-faith-network>).
- World Health Organization strategy for engaging religious leaders, faith-based organization and faith communities in health emergencies. Geneva: World Health Organization; 2021 (<https://apps.who.int/iris/handle/10665/347871>).
- *Areas of focus: Fostering and building partnerships, inclusion, capacity, and resilience.*
- From words to action: Towards a community-centred approach to preparedness and response in health emergencies. Geneva: International Federation of Red Cross and Red Crescent Societies; 2019 (<https://www.gpmb.org/annual-reports/overview/item/from-words-to-action-towards-a-community-centred-approach-to-preparedness-and-response-in-health-emergencies>).
- Enhanced Vulnerability and Capacity Assessment Toolbox [website]. Geneva: International Federation of the Red Cross and Red Crescent Societies; 2018 (<https://www.ifrcva.org/toolbox>).
- Community Engagement Hub. United Kingdom: British Red Cross (<https://www.communityengagementhub.org/>).

- Community Engagement and Accountability Toolkit. United Kingdom: British Red Cross (<https://communityengagementhub.org/guides-and-tools/cea-toolkit/>).
- World Health Organization, International Federation of the Red Cross and Red Crescent Societies, Global Outbreak Alert and Response Network & UNICEF. Operational Guide for Engaging Communities in Contact Tracing. Geneva: World Health Organization; 2021 (<https://www.who.int/publications/item/WHO-2019-nCoV-Contact-Tracing-Community-engagement-2021.1-eng>).
- The FSN Network and CORE Group. Make Me a Change Agent: A Multisectoral SBC Resource for Community Workers and Field Staff. Washington DC: The Tops Program; 2015 (<https://www.fsnnetwork.org/resource/make-me-change-agent-multisectoral-sbc-resource-community-workers-and-field-staff>).
- Simulation exercises [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/emergencies/operations/simulation-exercises>).
- WHO simulation exercise manual: a practical guide and tool for planning, conducting and evaluating simulation exercises for outbreaks and public health emergency preparedness and response. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254741>).
- Guidance for after action review (AAR). Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/311537>).
- Guidance for conducting a country COVID-19 intra-action review. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/333419>).

# Risk communication, community engagement & infodemic management additional benchmarks

## Community engagement

<p><b>BENCHMARK 16B.2: Inclusive community centred governance and management of health emergencies is in place</b></p> <p><b>OBJECTIVE: To ensure communities and civil societies participate in decision making, priority setting and resource allocation and to apply community engagement approaches in risk assessment, health emergency planning, prevention, preparedness, readiness, case detection, early warning, response and services to build community ownership, trust, accountability and resilience</b></p>	
CAPACITY LEVEL	BENCHMARK ACTIONS
<b>01</b> NO CAPACITY	<ul style="list-style-type: none"> <li>Community engagement efforts are not systematically linked to the emergency response.</li> </ul>
<b>02</b> LIMITED CAPACITY	<ul style="list-style-type: none"> <li>Identify and map major CSOs, NGOs, community networks and other sector stakeholders<sup>139</sup> working in health emergency related areas at national and subnational levels.</li> <li>Develop, with communities, frameworks, guidance and tools for community engagement, social mobilization and health promotion teams to connect with affected or at risk populations during health emergencies.</li> <li>Identify priority communities for preparedness, readiness and response capacity-building based on national risk assessment, readiness assessment, programme reviews and other information.</li> </ul>
Participation and contribution of other sectors to actions: 1, 2, 3	
<b>03</b> DEVELOPED CAPACITY	<ul style="list-style-type: none"> <li>Map the capacities of community partners and networks existing at the subnational and local levels in health and other relevant sectors for community management of health emergencies.</li> <li>Conduct participatory community risk assessment; context analysis, hazard mapping, health profiling, vulnerability mapping, capacity assessment and readiness planning in priority communities through inclusive approaches with involvement from NGOs, CSOs, CBOs and other relevant community networks.</li> </ul>

<sup>139</sup> One Health, DRR, WASH, zoonotic diseases, food safety and security, such as farmer associations, agricultural organizations, food vendors, transportation, livelihood, etc.

- Co develop, with communities, and disseminate local guidelines, SOPs, tools and templates for community mapping, assessments, planning (such as contingency plans), case detection, early warning and response coordination in health emergencies.
- Train community stakeholders, along with CSOs, CBOs and NGOs in case detection, early warning and response coordination for health emergencies.
- Plan and conduct pilot activities for local level health emergency SimEx (including drills and other exercises), with participation from community stakeholders and actors.
- Develop, test and implement local models and pilot projects on community knowledge management including identification of health priorities, resource mapping, community-based surveillance and local response coordination and governance using community engagement approaches.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6

## 04 DEMONSTRATED CAPACITY

- Conduct nationwide participatory community risk assessment, vulnerability mapping, capacity assessment, context analysis and readiness planning at the local level and in communities.
- Conduct risks assessments and community planning on a regular schedule.
- Conduct, plan and implement community level drills, SimEx/AAR/IAR (as relevant) with participation from community actors<sup>140</sup>.
- Allocate resources to local governments, communities and CBOs according to local plans for community management of health emergencies.
- Implement countrywide programmes for communities to build local emergency response systems aligned to community structures, such as community stockpiling of essential supplies (first aid kits, health emergency kits, PPE).
- Implement countrywide systems on community knowledge management including community case detection, early warning and local response coordination and governance.
- Identify research needs to address knowledge gaps on community management of health emergencies in vulnerable situations.

<sup>140</sup> Including village representatives, CSOs, CBOs, religious groups and other community networks.

- Involve local/community institutions (including schools, workplaces, private entities, NGOs, etc.) in health sector emergency planning and preparedness activities.
- Establish a multisectoral body for health emergencies (preparedness and response) at the local level including non-traditionally involved community stakeholders and networks such as employers/unions, faith based community, etc.
- Identify and register individuals in situations of vulnerability, such as patients needing long term care, children without vaccination, elderly and persons with disabilities.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8, 9, 10

## 05 SUSTAINABLE CAPACITY

- Evaluate/review community management of health emergencies, including the participation of community stakeholders.
- Allocate resources at subnational and/or local level for risk assessment; community health emergency planning, SimEx/IAR/AAR (as relevant) with participation from community stakeholders.
- Develop reports and case studies on effective management of health emergencies from a community perspective at the subnational/local level.
- Share country experiences in community health emergency management and participatory public health and engage in peer-to-peer learning programmes at the subnational level (between regions) and/or international level.
- Implement dynamic data and evidence generation by communities to inform research and support programmes for health emergency management, outbreak preparedness and response, DRR, risk assessment and programme implementation.
- Disseminate, promote and support evidence-based interventions among stakeholders in developing and implementing community engagement programmes in health emergency management.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6

**BENCHMARK 16B.3: Capacity-building mechanisms for multisectoral community health workforce and community engagement in the management of health emergencies and resilience building are well established**

**OBJECTIVE: To develop capacity-building mechanisms to improve community engagement for the management of health emergencies and to empower communities with necessary resources and tools to take timely actions to prevent, detect and respond to health emergencies in their communities.**

**CAPACITY LEVEL**

**BENCHMARK ACTIONS**

**01**  
**NO CAPACITY**

- Capacity-building mechanisms for engaging and empowering communities for health emergency preparedness and response are fragmented and without national strategy and support.

**02**  
**LIMITED CAPACITY**

- Identify key national experts to develop minimum standards, capacity development frameworks/plans for community health workforce capacity-building for community engagement in health emergencies.
- Map existing national community engagement capacity-building programmes and tools in DRR and other relevant sectors<sup>141</sup>.
- Establish a national network of experts/practitioners who can support community engagement for health emergency management.
- Develop and test minimum standards, capacity development frameworks/plans for community health workforce as well as competencies for the health workforce at all levels on community engagement for health emergencies<sup>142</sup>.
- Establish a platform for disseminating learning opportunities for national focal point(s) for community engagement and social mobilization in health emergencies and outbreak response and develop trainings and knowledge products on topics such as community level health emergency management, engagement with populations in situations of vulnerability<sup>143</sup> and community engagement skills<sup>144</sup>.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5

<sup>141</sup> Such as education, transportation, security and tourism, through a One Health approach.

<sup>142</sup> Considering current needs, types of workforce, community capacities, workforce competencies and ToRs, current knowledge and skills level.

<sup>143</sup> Such as refugees, internally displaced populations, ethnic minorities, etc. (or integrate as part of existing capacity-building).

<sup>144</sup> Such as community dialogue and participation, interpersonal communication, coordination skills and processes, collaborative teams, social and behavioural change, health literacy, etc.



## 03 DEVELOPED CAPACITY

- Disseminate minimum standards, capacity development frameworks/plans for community health workforce as well as competencies for the health workforce on community engagement for health emergencies.
- Develop and disseminate training packages on minimum standards, capacity development frameworks/plans for community health workforce and competencies on community engagement in health emergencies at the national level.
- Implement mechanism to support community engagement in health emergency design, programming, advocacy, emergency response planning, M&E, research, training activities and implementation.
- Develop and test capacity-building packages on community engagement for health emergency preparedness and response for multidisciplinary actors in health including private sector, health professionals in workplaces and schools, traditional healers, burial attendants, etc.
- Develop and test SOPs for surge capacity for the rapid deployment of officers and staff trained in community engagement during health emergencies.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5

## 04 DEMONSTRATED CAPACITY

- Review the functionality of national network of experts/practitioners who can support on community engagement for health emergency management before, during and after an emergency.
- Implement SOPs for surge capacity for the rapid deployment of officers and staff trained in community engagement during health emergencies.
- Develop and maintain a roster of health and community workers trained in community engagement in health emergency management for rapid deployment to target communities.
- Established mechanisms to provide insurance, indemnification and compensation to staff and volunteers injured or sickened during community engagement work.
- Utilize the learning platform for refresher training at the national and subnational levels.
- Conduct M&E to review coordination, interoperability and readiness for emergency response required for community engagement.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6

## 05 SUSTAINABLE CAPACITY

- Update the SOPs, minimum standards, capacity development frameworks/plans for community engagement for health emergency management before, during and after emergencies based on M&E results and update training packages as needed.
- Review and update mechanisms to provide insurance, indemnification and compensation to staff and volunteers injured or sickened during community engagement work.
- Review and update capacity-building programmes, including the learning platform to disseminate training and knowledge for community engagement.
- Document and disseminate best practices and lessons learned of community engagement before, during and after emergencies.

Participation and contribution of other sectors to actions:

1, 2, 3, 4

# Infodemic management

**BENCHMARK 16C.1: An infodemic management system for health emergencies and unusual events is in place**

**OBJECTIVE: To develop a system for monitoring and managing infodemics before, during and after health emergencies and unusual events**

**CAPACITY LEVEL**

**BENCHMARK ACTIONS**

**01**  
NO CAPACITY

- Aspects of infodemic management are under development or conducted on an ad hoc basis.

**02**  
LIMITED  
CAPACITY

- Establish an infodemic management unit/team, with ToRs, in the health ministry and/or the national institute of public health.
- Conduct multisectoral landscape analysis to identify stakeholders and potential partners as well as opportunities and weaknesses in health information seeking and use.
- Identify and connect with stakeholders and teams who have relevant job profiles and functions related to infodemic management<sup>145</sup>.
- Develop and test a national multihazard multisectoral infodemic management strategy<sup>146</sup> and plan.
- Develop a basic editorial style for published health information products<sup>147</sup> and start health authority webpages<sup>148</sup> and social media channels.
- Produce social listening and infodemic insight reports to inform specific routine health programme activities that require infodemic management support<sup>149</sup> on an as needed basis.
- Integrate infodemic management capacities and strategies in the national multihazard risk communication and community engagement plan and health emergency incident management system SOPs.

Participation and contribution of other sectors to actions:

2, 3, 4, 5, 6, 7

<sup>145</sup> Such as health promotion, health communication, health communication, social media engagement, health information systems, digital health, risk communication, behavioural insights and community engagement.

<sup>146</sup> Content moderation strategy for all official social media channels to determine when to rebut, debunk or debunk health misinformation.

<sup>147</sup> Example: permalinks, dating each piece of content or health guidance, using terms that have been pretested and are well understood by the target population.

<sup>148</sup> Including a maintained and up-to-date webpage where most common questions and misinformation are addressed to provide factcheckers and media with reliable links.

<sup>149</sup> Such as support of health promotion or supplementary immunization activity campaigns.

## 03 DEVELOPED CAPACITY

- Implement the national multihazard multisectoral infodemic management strategy and plan at the national level.
- Develop SOPs for analysis, access to data sources to conduct rapid infodemic insights analysis and to respond to ad hoc requests from the IMS.
- Identify networks and staff for surge support capacity during outbreaks, who are trained in infodemic management tools and practices, at the national level.
- Establish and test a mechanism for rapid content development to support infodemic response using infodemic insights<sup>150</sup>.
- Develop, test and implement multisectoral infodemic monitoring and evaluation tools<sup>151</sup> at the national level.
- Develop and disseminate training packages and tools to support health workers to effectively address questions from their patients and media and for the management of misinformation at the national level.
- Implement the basic editorial style for published health information products and update health authority webpages and social media channels regularly at the national level.
- Establish a coordination mechanism for infodemic management including health information publishers<sup>152</sup> at the national level.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8

- Use job aids and toolkits, in relevant sectors, that explain the specificity of working with health misinformation as compared to other kinds of misinformation domains.
- Identify and participate in trainings for relevant sectors to collaborate with infodemic management teams before, during and after health emergencies and unusual health events.
- Implement the national multihazard multisectoral infodemic management strategy and plan at the subnational level.
- Implement SOPs for analysis and access to data sources to conduct rapid infodemic insights analysis regularly before, during and after emergencies.
- Implement multisectoral infodemic monitoring and evaluation tools and use information for decision-making at the subnational level.

## 04 DEMONSTRATED CAPACITY

<sup>150</sup> Infodemic insights focused on narratives; where possible, incorporate individual and community perspectives in this process.

<sup>151</sup> Such as risk assessment criteria and matrices, social listening taxonomies, SOPs for search engine optimization, accessibility and usability are defined and used in analysis and response to questions, concerns, information voids, circulating narratives and mis- and disinformation.

<sup>152</sup> Such as expert groups, health regulatory authorities, medical associations, libraries, health reference web sites and other publishers for credible and accurate health information, and unstructured digital communities and networks whose values support health information promotion (such as world of work, community influencers, etc.).

- Develop and disseminate training packages and tools to support health workers to effectively address questions from their patients and media and for the management of misinformation at the subnational level.
- Identify, develop and deploy infodemic management interventions<sup>153</sup>.
- Develop SOPs, tools and partnerships to detect, address and mitigate disinformation and cyberattacks<sup>154</sup> and delineate multisectoral responsibility for response.
- Conduct a review (SimEx/AAR/IAR, as relevant) on infodemic management before, during and after emergencies at national and subnational levels.
- Develop infodemic management capacities in CSOs, academic institutions and other partners engaged in health emergency preparedness, health promotion and health service delivery.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8

## 05 SUSTAINABLE CAPACITY

- Update infodemic management strategies, plans, SOPs and trainings based on lessons learned and best practices from review, testing and research based evidence.
- Prioritize infodemiology as a funded research area with multisectoral engagement and CSO/CBO/NGO involvement.
- Integrate infodemic management into relevant health policies.
- Allocate dedicated budget for infodemic management.
- Utilize advanced analytical innovations for analysis of narratives and social networks by infodemic management unit<sup>155</sup>.
- Participate in policy dialogues with relevant sectors of government and of society on mitigating harms from misinformation, protecting freedom of speech, promoting internet governance, and online content moderation in the context of misinformation and health service delivery during health emergencies and unusual events.
- Sustain systems for long term monitoring, evaluation and improvement of policies, interventions and strategies for infodemic management<sup>156</sup>.

<sup>153</sup> These interventions include those that promote resilience to health misinformation, reduce circulation of health misinformation, promote spread of accurate credible health information, and address policy and structural barriers for effective infodemic management.

<sup>154</sup> To detect, report and address deceptive marketing practices and consumer rights violations in areas of health information dissemination.

<sup>155</sup> Advanced analytics include language agnostic or across multiple languages, type of digital content beyond text based analysis, can produce infodemic insights on a more rapid basis and in real time and updates on information environment landscape analysis every 6 months.

<sup>156</sup> Including for detection of unintended consequences and for ensuring ethical social listening and infodemic management.

- Document and disseminate best practices and lessons learned on infodemic management.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8

## Tools:

- Infodemic [website]. Geneva: World Health Organization; 2023 ([https://www.who.int/health-topics/infodemic#tab=tab\\_1](https://www.who.int/health-topics/infodemic#tab=tab_1)).
- WHO launches pilot of AI-powered public-access social listening tool [website]. Geneva: World Health Organization; 2021 (<https://www.who.int/news-room/feature-stories/detail/who-launches-pilot-of-ai-powered-public-access-social-listening-tool#:~:text=The%20EARS%20platform%20is%20powered,scale%2C%20in%20real%2Dtime>).
- 3rd WHO training on infodemic management. 16 Nov - 9 Dec 2021, cosponsored by US CDC, UNICEF and RCCE collective service [website]. Geneva: World Health Organization; 2021 (<https://www.who.int/teams/risk-communication/infodemic-management/3rd-who-training-on-infodemic-management>).
- How to build an infodemic insights report in six steps. Geneva: World Health Organization and the United Nations Children Fund (UNICEF); 2023 (<https://apps.who.int/iris/handle/10665/370317>).
- Infodemic management 101 OpenWho [website online course]. Geneva: World Health Organization; 2021 (<https://openwho.org/courses/infodemic-management-101>).
- Simulation exercises [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/emergencies/operations/simulation-exercises>).
- WHO simulation exercise manual: a practical guide and tool for planning, conducting and evaluating simulation exercises for outbreaks and public health emergency preparedness and response. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254741>).
- Guidance for after action review (AAR). Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/311537>).
- Guidance for conducting a country COVID-19 intra-action review. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/333419>).

# 17

## Points of entry and border health

States Parties must designate international airports and ports (and, where justified for public health reasons, a State Party may designate ground crossings) at which it must implement and maintain core public health capacities required to prevent, detect and manage a variety of public health risks using a multisectoral approach (IHR Annex 1B). The management of health threats and events at points of entry (PoE) requires effective communication and collaboration among many sectors, including health, foreign affairs, customs, interior affairs, security, transport, tourism and migration, among others. In addition, States Parties must also have effective multisectoral capacities at the national level to decide upon the adequate use of travel-related measures during a health emergency.



### IMPACT:

Timely detection of and effective response to any potential hazards that occur at or may be spread via PoE.



### MONITORING AND EVALUATION:

(1) Routine core capacities (as prescribed in the IHR Annex 1B) are implemented at all times at all designated PoEs with an all hazard and multisectoral approach, integrated into national surveillance systems, exercised (as appropriate), reviewed, evaluated, updated and improved on a regular basis. (2) All PoE health emergency contingency plans for all hazard events are developed and integrated into national emergency response plans, exercised (as appropriate), reviewed, evaluated and updated on a regular basis. (4) A risk-based approach is taken toward the use of international travel-related measures during health emergencies. (3) National multisectoral process and mechanisms to determine the adoption of international travel related measures on a risk-based manner are being implemented at national and subnational levels, including guidelines and SOPs for their implementation, and are exercised (as appropriate), reviewed, evaluated and updated on a regular basis or in response to an event or emergency.



BENCHMARK 17.1: Routine core capacities at points of entry (PoEs) are in place	
OBJECTIVE: To have established routine capacities at designated PoEs	
CAPACITY LEVEL	BENCHMARK ACTIONS
<b>01</b> NO CAPACITY	<ul style="list-style-type: none"> <li>● Country has not undertaken a strategic risk assessment to designate individual PoEs.</li> </ul>
<b>02</b> LIMITED CAPACITY	<ul style="list-style-type: none"> <li>● Conduct strategic risk and capacity assessments to inform and prioritize selection of key PoEs for IHR designation.</li> <li>● Designate PoEs according to IHR requirements and identify competent authorities at designated PoE.</li> <li>● Identify key relevant stakeholders for establishing and maintaining core capacities at each designated PoE in a multisectoral manner.</li> <li>● Develop a plan to establish and maintain all the routine capacities prescribed in the IHR Annex 1B.</li> <li>● Establish some capacities at some designated PoEs such as the development and implementation of SOPs and training packages for routine capacities, the provision of adequate resources including space, equipment and premises for the management of public health events, and resources for the inspection of conveyances and the control of vectors and reservoirs in and near PoEs as per the requirements in IHR Annex 1B.</li> </ul>
<b>03</b> DEVELOPED CAPACITY	<p>Participation and contribution of other sectors to actions:</p> <p>1, 2, 3, 4, 5</p> <ul style="list-style-type: none"> <li>● Participation by all relevant stakeholders across sectors (e.g. transport, customs, migration, law enforcement, environment, veterinary services, food safety) to inform decisions on their potential designation under the IHR.</li> <li>● Allocate sustainable funds for the implementation of the plan to have all routine capacities prescribed in IHR Annex 1B in place and functioning in at least some designated PoEs, for all hazards, including biological.</li> <li>● Conduct regular trainings to ensure that all relevant staff at some designated PoEs are knowledgeable about the SOPs for the establishment and maintenance of core capacities for all hazards, and that these are functional, as per IHR Annex 1B.</li> <li>● Integrate surveillance activities in at least some designated PoEs within the national surveillance system for all hazards, including biological.</li> </ul>

- Conduct regular M&E exercises, such as SimEx/AAR/IAR (as relevant), to assess the functionality and sustainability of core capacities at some designated PoEs.

Participation and contribution of other sectors to actions:

1, 2, 3, 4

- Sharing of information and pooling of available resources regularly by key stakeholders in relevant sectors with the public health sector to maintain routine core capacities at some PoEs.

## 04 DEMONSTRATED CAPACITY

- Allocate adequate resources to maintain routine capacities for all hazard prevention, detection and response at all designated PoEs.
- Implement the plan to have all routine capacities prescribed in IHR Annex 1B in place and functioning in all designated PoEs and for all hazards.
- Develop and implement SOPs for the establishment and maintenance of functional core capacities as per Annex 1B and train and assign staff at all designated PoEs to respond to routine public health events for all hazards.
- Integrate all designated PoEs into the national surveillance systems for all hazards with the involvement of relevant sectors.
- Formalize agreements with neighbouring countries for rapid and secured sharing of data and information on health risks and emergency events at and around PoEs, in particular at ground crossings in high risk areas and where communities adjacent to borders are deeply integrated.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5

- Support from finance ministry and foreign affairs ministry to mobilize national resources, and external resources if needed, to maintain the routine capacities at all designated PoEs.

## 05 SUSTAINABLE CAPACITY

- Mobilize staff and provide sustainable funds for the regular implementation of M&E activities to ensure the continuous functionality of all core capacities at all designated PoEs.
- Use results from M&E, SimEx/AAR/IAR (as relevant) to fill any existing gaps identified in the operationalization of core capacities at all designated PoEs.
- Share information and experiences on the continuous improvement and maintenance of routine capacities at PoEs by engaging the country in peer-to-peer learning programmes at the subnational, national and international levels.

Participation and contribution of other sectors to actions:

1, 2, 3

BENCHMARK 17.2: Public health responses at PoEs are in place	
OBJECTIVE: To strengthen capacity for effective public health response at PoEs	
CAPACITY LEVEL	BENCHMARK ACTIONS
<b>01</b> NO CAPACITY	<ul style="list-style-type: none"> <li>● Public health emergency contingency plans for each designated point of entry to respond to health emergencies are not in place or are in the process of being developed.</li> </ul>
<b>02</b> LIMITED CAPACITY	<ul style="list-style-type: none"> <li>● Identify designated PoEs that do not have a multisectoral health emergency contingency plan in place, or where a plan is under development, and identify and convene all relevant stakeholders that need to be involved in the development of the multisectoral health emergency contingency plan at each designated PoE.</li> <li>● Review and map the relevant laws, guidance and SOPs related to the response to a health emergency caused by a biological hazard in at least some designated PoEs including in relation to sensitive issues such as: information sharing, management of personal data, implementation of measures such as quarantine or closure of borders, etc.</li> <li>● Conduct a public health risk assessment at/around some designated PoEs, including both sides of the border in the case of ground crossings, to identify priority biological hazards as well as vulnerable populations that may be at higher risk.</li> <li>● Develop a multisectoral health emergency contingency plan for events caused by biological hazards, including SOPs and guidance following risk assessment, in at least some designated PoEs according to IHR Annex 1.</li> <li>● Identify surge capacity to respond to a potential cross-border emergency public health threat at/around PoEs and document the means to mobilize such surge capacity in the PoE multisectoral health emergency contingency plan and/or SOPs.</li> <li>● Train border health staff on the multisectoral health emergency contingency plan and related guidance and SOPs for responding to events due to biological hazards in some designated PoEs, and develop a regular training programme to promote continuous learning and refresher training for border health staff and possible surge staff.</li> <li>● Allocate all necessary resources and associated funding, including human resources, infrastructure, equipment and other materials, for the implementation of the emergency contingency plan during response to a health emergency caused by biological hazards in some designated PoEs.</li> </ul>

## 03 DEVELOPED CAPACITY

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7

- Participation, by all relevant stakeholders across sectors, in the development and implementation of the PoE multisectoral health emergency contingency plan for biological hazards, including through the identification of the necessary resources for the implementation of cross-sectoral actions, the allocation of surge staff when needed and the implementation of training programmes.
- Develop a multisectoral health emergency contingency plan for biological hazards in all designated PoEs with guidance and SOPs for responding to public health events caused by biological hazards.
- Integrate all designated PoEs, and some non-designated PoEs, into the national surveillance system to ensure the timely sharing of information to inform the public health response.
- Integrate all designated PoEs into the national emergency preparedness and response plan with the involvement of relevant sectors and services.
- Allocate resources including funds to all designated PoEs for implementation of the plan during public health events caused by biological hazards.
- Demonstrate capacity to apply health measures related to travellers at PoEs and PoE environment for early detection, assessment and containment of public health risks, isolation and safe transfer of sick travellers to appropriate medical facilities at all designated PoEs.
- Organize regular trainings on and demonstrate knowledge of the required health related documents and the correct use of information for detecting, reporting, assessing and providing first control measures to public health events, according to type and kind of conveyances.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6

- Provide recommendations by relevant stakeholders to update, or develop new legislation or policies if required, to ensure that the PoE multisectoral health emergency contingency plans are well integrated into other emergency response plans at the PoE, subnational and national levels.
- Organize and support advocacy initiatives across relevant sectors for synchronized management of health emergencies at PoEs through training, raising awareness of communities and sensitizing partners and journalists to ensure that accurate information and education messages are disseminated across these networks.

## 04 DEMONSTRATED CAPACITY

- Include all hazards (chemical, biological, radiological and nuclear) in the multisectoral health emergency contingency plan in all designated PoEs and integrate into national emergency response plans.
- Train staff of all designated PoEs on guidance and SOPs for responding to events due to any type of hazard, including care of affected animals and referral mechanism in collaboration with the animal sector.
- Allocate resources including funds to all designated PoEs for implementation of the plan during any type of hazard event, including care of affected animals and referral mechanism to veterinary services.
- Demonstrate capacity to apply all recommended health measures to travellers, animals and cargo, conveyances including to disinfect, de-rat, disinsect, decontaminate or otherwise treat baggage, cargo, containers, conveyances, goods and postal parcels.
- Establish isolation units to isolate and quarantine suspected human or animal cases of communicable diseases and establish a strategic stockpile<sup>157</sup> of essential medical countermeasures based on the health emergency risk assessment conducted at all designated PoEs.
- Constitute a roster of trained staff ready to be deployed as surge at PoEs to support rapid implementation of emergency activities in line with national and international recommendations.
- Establish a PHEOC at major designated PoEs with material and functional equipment, updated SOPs and staff trained.
- Conduct SimEx/AAR/IAR (as relevant) at regular intervals to test and review response capacities of all designated PoEs and document results.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8

- Involvement of relevant sectors in the implementation of the plan, including in the design and implementation of related trainings and the identification of surge staff.
- Identification by the animal health sector of veterinary centres to provide diagnostic tests, assessment and recommended measures related to affected animals identified at PoEs.

<sup>157</sup> The stockpile will be made of relevant medical devices, vaccines, drugs, biologicals, personal protective equipment and other medical supplies for early response to public health emergencies.

## 05 SUSTAINABLE CAPACITY

- Demonstrate action to address recommendations for improvement based on the results of SimEx/AAR/IAR (as relevant).
- Update the PoE multisectoral health emergency contingency plan and related mechanisms, guidance and SOPs based on findings from evaluations and tests.
- Share best practices for continuous improvement with all relevant stakeholders.
- Communicate public health risks and related mitigation measures to multisectoral partners operating at PoEs, including conveyance and PoE facility operators.
- Support research programmes to generate evidence on capacities required to manage health emergencies at PoEs.
- Share experiences from capacity development for the management of health emergencies at PoEs and engage the country in peer-to-peer learning programmes at the subnational, national and international levels.
- Draft, review and/or test joint strategies and procedures with neighbouring countries for the management of cross border or international health emergencies at designated PoEs.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7

- Support by relevant sectors to communicate public health risks and related mitigation measures in a joint and coherent manner at the level of PoE.
- Involvement of all relevant stakeholders to support research programmes and sharing of experiences on all hazard health emergency response at PoEs.



<b>BENCHMARK 17.3: An effective multisectoral mechanism for risk-based approach to international travel related measures is in place</b> <b>OBJECTIVE: To strengthen multisectoral capacities for applying a risk-based approach to the use of international travel related measures during health emergencies</b>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● National multisectoral mechanism to conduct risk-based approaches for strategic planning for international travel-related measures, including prevention, detection/investigation, response and recovery is not available, is ad hoc or underdevelopment.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Identify and map key stakeholders for the development and implementation of international travel-related measures including prevention, detection/ investigation, response and recovery in relevant sectors (health, transportation, migration, customs, tourism, etc.) taking into consideration the entire traveller pathway from departure to transit and destination.</li> <li>● Develop a national multisectoral strategy and advisory committee with ToRs (with identified roles and responsibilities) to streamline public health risk assessments, the implementation of recommended international travel-related risk mitigation measures (e.g. screening, contact tracing, quarantine, testing, immunization requirements, etc.), and risk communication.</li> <li>● Review existing mechanisms for conducting risk assessments to inform travel related measures and related policy and legal documentation in the country.</li> <li>● Identify gaps and methods to streamline the risk assessment and communication processes for international travel related threats which may require the use of travel-related measures.</li> <li>● Develop a training package for multisectoral staff to operationalize international travel related measures at PoEs, national and subnational levels.</li> <li>● Develop a RCCE strategy to explain the rationale underpinning international travel related measures, create feedback loop mechanisms with affected populations and increase trust in the overall response.</li> <li>● Identify cadre requirement/service requirement in health sector at designated PoEs to implement international travel related measures.</li> <li>● Document and test communication procedures between PoE and health authorities (through MoUs/other protocols). Document, share and regularly update, contact details.</li> </ul>
Participation and contribution of other sectors to actions: 1, 2, 3, 4, 5, 6, 7, 8	

## 03 DEVELOPED CAPACITY

- Develop or update legislation (relevant to screening, quarantine, testing, contact tracing, etc.) to enable the implementation of international travel related measures based on identified risk level.
- Convene the advisory committee/multisectoral stakeholder committee regularly and on occasions of at risk warnings to implement relevant international travel related measures with rational collective decision-making.
- Develop SOPs/guidance for the operationalization of risk-based international travel-related measures when required at national, subnational and PoE levels.
- Identify all relevant partners/agencies (from the public and private sector) that will be involved in or affected by international travel related measures, maintain a database including contacts and introduce the strategy and related SOP/guidance for active implementation.
- Operationalize the training package for multisectoral staff to implement international travel related measures at PoE, national and subnational levels when required.
- Identify a focal point (unit/department/team) in the health ministry to coordinate with public health staff at designated PoEs, relevant multisectoral stakeholders and international agencies to receive early warnings for the implementation, calibration and lifting of risk-based international travel related measures.
- Provide adequate health staff and identify surge capacity for designated PoEs and other relevant health institutes as well as logistics (such as entry and exit screening, testing laboratories, etc.) for the implementation of international travel related measures.
- Identify designated centres to provide travel health assessments, immunization based on travel requirements and prophylaxis as required.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 7, 8

- Contribute (by relevant sectors) to the collective decision-making, implementation and communication of risk-based international travel related measures at national and subnational levels and at PoEs, as required.

## 04 DEMONSTRATED CAPACITY

- Identify multisectoral stakeholders/institutes/agencies at the subnational level to implement risk-based approach for international travel related measures and maintain a database including contact details.
- Conduct trainings on SOPs/guidelines for relevant multisectoral staff at all levels including the subnational level.
- Establish quick communication channels with relevant multisectoral stakeholders at all levels including subnational level.
- Implement risk-based strategies/SOPs/guidelines on national multisectoral process for international travel related measures at the subnational level while continuing functioning at the national level.
- Implement appropriate RCCE practices to share information on the public health risk and mitigation measures, including international travel-related measures, with all relevant stakeholders including the general public.
- Develop an M&E system to monitor the process and assess effectiveness and impact of the international travel measures implemented, including any potential unintended consequences.
- Conduct regular risk assessments to update and adjust international travel-related measures, applying new information on their effectiveness and impact as it becomes available.
- Conduct SimEx regularly on different components of international travel related measures (such as entry/exist screening, contact tracing, quarantine) at different levels with involvement of multisectoral staff.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8

- Actively participate (by all relevant actors) in the decision-making and implementation of international travel-related measures at national and subnational levels.
- Share information on effectiveness and impact of international travel measures by all relevant stakeholders to ensure timely course correction.

## 05 SUSTAINABLE CAPACITY

- Conduct and document SimEx/AAR/IAR (as relevant) at least annually at premises of designated PoEs for entry/exit screening, communication, testing, transport for referral hospitals, etc. using risk-based scenarios with multisectoral stakeholders.
- Conduct regular monitoring of the functionality and evaluation of the effectiveness and impact of risk-based international travel related measures within country.
- Update SOPs/guidelines based on results of SimEx/AAR/IAR (as relevant), addressing identified gaps.

- Continue implementation of national multisectoral processes and mechanisms to determine the adoption of international travel related measures at all levels and that they are exercised (as appropriate), reviewed, evaluated and updated on a regular basis, in response to an event or emergency.
- Provide regular updates from risk assessment teams with an all hazard approach to timely initiate relevant international travel related measures commensurate with risk level, with multisectoral involvement.
- Maintain good collaboration with regional and global networks/agencies for early warning and travel health.
- Identify best practices and share among multisectoral teams at all levels and with international platforms for peer learning.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7

- Update legislations and plans in relevant sectors to support sustainable implementation.

## Tools:

- International Health Regulations (2005): assessment tool for core capacity requirements at designated airports, ports and ground crossings. Geneva: World Health Organization; 2009 (<https://apps.who.int/iris/handle/10665/70839>).  
*This document was developed to support States Parties in assessing existing capacities and capacity needs at points of entry when deciding which airports, ports and ground crossings to designate under Article 20.1 and Annex 1B. It includes an Excel spreadsheet file model for IHR core capacities assessment at ports, airports and ground crossings.*
- Coordinated public health surveillance between points of entry and national health surveillance systems: advising principles. 1st edition. Geneva: World Health Organization; 2014 (<https://apps.who.int/iris/handle/10665/144805>).  
*This document provides steps for implementing/strengthening communication mechanisms and defines criteria for deciding what and how events should be reported between points of entry and the national health surveillance system.*
- Handbook for the management of public health events in air transport: updated with information on Ebola virus disease and Middle East respiratory syndrome coronavirus. Geneva: World Health Organization; 2016 (<https://apps.who.int/iris/handle/10665/204628>).  
*This document is complementary to other WHO publications addressing risk assessment at a national level, contingency planning at points of entry, establishment of capacities and application of emergency plans at the airport level.*

- Handbook for management of public health events on board ships. Geneva: World Health Organization; 2016 (<https://apps.who.int/iris/handle/10665/205796>).  
*This document aims to provide technical advice to competent authorities at the port level for management of public health events aboard ships. It complements other WHO publications addressing risk assessment at the national level; contingency planning at ports, airports and ground crossings; and establishment of capacities and application of emergency plans at the port level.*
- Handbook for inspection of ships and issuance of ship sanitation certificates. Geneva: World Health Organization; 2011 (<https://apps.who.int/iris/handle/10665/44594>).  
*This handbook is based on the IHR (2005) provisions regarding ship inspections and issue of Ship Sanitation Certificates. It provides guidance for preparing and performing inspection, completing the certificates and applying public health measures within the framework of the IHR (2005).*
- Vector surveillance and control at ports, airports, and ground crossings. Geneva: World Health Organization; 2016 (<https://apps.who.int/iris/handle/10665/204660>).  
*This handbook provides technical advice for developing a comprehensive programme for systematic monitoring of disease vectors and integrated vector control at points of entry, based on IHR requirements.*
- WHO interim guidance for Ebola event management at points of entry. Geneva: World Health Organization; 2014 (<https://apps.who.int/iris/handle/10665/131827>).  
*Technical guidance set on Ebola virus disease preparedness and response aims to: (i) provide early detection of potentially infected persons; (ii) assist in implementing WHO recommendations related to Ebola management; and (iii) prevent the international spread of the disease while allowing authorities to avoid unnecessary restrictions and delays at points of entry.*
- Technical considerations for implementing a risk-based approach to international travel in the context of COVID-19: Interim guidance, 2 July 2021. Geneva: World Health Organization; 2021 (<https://www.who.int/publications/item/WHO-2019-nCoV-Risk-based-international-travel-2021.1>).
- WHO Guide to ship sanitation. Third edition. Geneva: World Health Organization; 2011 (<https://apps.who.int/iris/handle/10665/43193>).  
*The primary aim of the revised guide to ship sanitation is to present the public health significance of ships in terms of disease and to highlight the importance of applying appropriate control measures.*
- Guide to hygiene and sanitation in aviation. 3rd Edition. Geneva: World Health Organization; 2009 (<https://apps.who.int/iris/handle/10665/44164>).  
*This document addresses water and cleaning and disinfection of facilities with guidelines that provide procedures and quality specifications that are to be achieved.*

- International Health Regulations (2005): a guide for public health emergency contingency planning at designated points of entry. Geneva: World Health Organization; 2012 (<https://www.who.int/publications/i/item/9789290615668>).  
*This guide was designed to assist WHO Member States, both large and small, to bridge the gap between the legal requirements of IHR and the pragmatic readiness and response capacity for public health emergencies at designated points of entry.*
- Handbook for public health capacity-building at ground crossings and cross-border collaboration. Geneva: World Health Organization; 2020 (<https://www.who.int/publications/i/item/handbook-for-public-health-capacity-building-at-ground-crossings-and-cross-border-collaboration>).
- WHO aircraft disinfection methods and procedures. Geneva: World Health Organization; 2021 (<https://www.who.int/publications/i/item/9789240014459>).
- Simulation exercises [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/emergencies/operations/simulation-exercises>).
- WHO simulation exercise manual: a practical guide and tool for planning, conducting and evaluating simulation exercises for outbreaks and public health emergency preparedness and response. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254741>).
- Guidance for after action review (AAR). Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/311537>).
- Guidance for conducting a country COVID-19 intra-action review. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/333419>).

# 18

## Chemical events

States Parties will have surveillance and response capacity for chemical risks or events. This requires effective communication and collaboration among the sectors responsible for chemical safety, including health, occupational health, emergency management, industry, transportation, safe waste disposal, agriculture, animal health and the environment..



### **IMPACT:**

Timely detection of and effective response to potential chemical risks and/or events in collaboration with other sectors responsible for chemical safety, industries, transportation and safe waste disposal.



### **MONITORING AND EVALUATION:**

Mechanisms and an enabling environment are established and functioning for preventing, detecting and responding to chemical events or emergencies.



<b>BENCHMARK 18.1: Mechanisms are in place for surveillance, alert and response to chemical events or emergencies, supported by an enabling environment</b> <b>OBJECTIVE: To establish policies, legislation, plans and capacities for surveillance, alert and response to chemical events or emergencies</b>	
CAPACITY LEVEL	BENCHMARK ACTIONS
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● No mechanism to detect and respond to chemical events, poisonings or emergencies is in place.</li> <li>● National policies, plans or legislation for chemical event surveillance, alert and response do not exist.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Assess existing policies, legislation, plans and capacities for chemical event surveillance, alert and response in relevant sectors and existing laboratory capacities for the analysis of human and environmental samples to inform the assessment and manage investigation of chemical events and poisonings.</li> <li>● Establish a multisectoral steering committee consisting of key stakeholders from relevant sectors with identified roles, responsibilities and ToRs to enable agreed risk profiling, prioritization, planning and implementation.</li> <li>● Develop strategies, guidelines/manuals and SOPs for surveillance, alert and response to chemical events and emergencies including for laboratories and develop training packages on these guidelines and SOPs.</li> <li>● Conduct risk profiling to identify hazard sources (including sites, transport and issues at point of use), likelihood and severity, based on populations at risk and potential nature of an incident.</li> <li>● Identify and describe priority chemical events to inform planning. This process can include conducting an inventory of potentially hazardous chemical sites and manufacturing facilities and a review of past chemical events.</li> <li>● Assess capacities for chemical event surveillance, alert and response, including health sector workforce, identification and availability of medical countermeasures and antidotes for high risk chemical hazards and overall health system response capacity.</li> <li>● Develop a roadmap/action plan to support the delivery of a sustainable national poisons centre, or equivalent.</li> </ul> <p>Participation and contribution of other sectors to actions:</p> <p>1, 2, 3, 4, 5, 6, 7</p> <ul style="list-style-type: none"> <li>● Identify and map all public and private sector stakeholders involved in chemical industries or activities generating chemical risks and establish focal points for coordination and collaboration for chemical event surveillance, alert and response.</li> <li>● Conduct a multiagency situational analysis/review to understand data availability, data sources, pathway of data flow and receptors towards the development of the surveillance system for chemicals.</li> </ul>

## 03 DEVELOPED CAPACITY

- Develop all the necessary policies and legislation for chemical event surveillance, alert and response.
- Develop event response plans at all levels with the involvement of relevant stakeholders and ensure the following:
  - Map and review all hazardous sites and facilities
  - Define roles and responsibilities of relevant agencies for response during events
  - Prepare protocols for the investigation and verification of chemical events and poisoning, including through laboratory testing
  - Assess training needs and develop a training plan
  - Conduct training of personnel at relevant agencies and facilities
  - Implement SOPs for coordination and collaboration during chemical events.
- Establish a surveillance system based on the strategy, guidelines, SOPs for surveillance, alert and response to chemical events.
- Put in place agreements with designated quality assured laboratories (national or in other countries) for timely analysis of biological and environmental samples with suspected chemical exposure.
- Establish a system for a national poisons centre to receive information on the composition of hazardous products (detergents, paints, adhesives, etc.) imported and sold in the country.
- Develop capacities for diagnosis and treatment of chemical poisonings and establish a poison information service, as a part of the national poisons centre, that operates at least during office hours. Procure and ensure access to a stockpile of medical countermeasures and antidotes required for high risk chemical hazards.
- Collect technical factsheets on chemical hazards based on the list of priority chemical events in the country and develop or adapt them according to the risk profile and country context. Distribute the list to all relevant stakeholders.
- Establish networks with all relevant sectors for preparedness and response to chemical and radiation emergencies.
- Develop plans for the management of chemical waste.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8, 9

## 04 DEMONSTRATED CAPACITY

- Establish links with key international chemical/toxicology networks<sup>158</sup> to provide support for the management of chemical events and poisonings.
- Conduct regular training on surveillance, alert and response to chemical events and poisonings for relevant personnel, including sensitizing all relevant health and other sector workers on medical protocols.
- Share, on a routine basis, information on chemical events, chemical event risk assessments and response actions with relevant agencies.
- Monitor, on a routine basis, the timeliness of the information sharing mechanism about events and potential risk.
- Provide adequate resources to the national poison information service<sup>159</sup> to operate on a 24/7 basis and integrate the poisons information service into the public health surveillance system.
- Organize advocacy initiatives including disseminating accurate messages on chemical risks and conducting community awareness of chemical safety, including what to do in the case of a chemical poisoning/event and the contact details of national poisons centres/information services.
- Conduct SimEx/AAR/IAR (as relevant) at designated hospitals or emergency units on managing mass casualty incidents for chemical events (decontamination/PPE usage/handling casualties, etc.)
- Implement plans to establish an effective chemical waste management system in the country including collection, storage, decontamination and treatment.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8

## 05 SUSTAINABLE CAPACITY

- Document and use M&E findings to assess, review and strengthen surveillance, alert and response including coordination and communication and update plans and SOPs.
- Sustain a mechanism to conduct risk assessment and update risk profiling on a regular basis.
- Allocate adequate resources including dedicated funds for the poison centre(s).
- Develop a mechanism to integrate the systems of public health surveillance and environmental monitoring that capture and assess chemical exposures from different sources.

<sup>158</sup> Examples include the WHO global and regional toxicology networks and other regional networks, such as in the European Union, professional toxicology associations.

<sup>159</sup> The poisons centre should be sufficiently staffed and resourced to provide a robust and reliable 24/7 service. The poisons centre should be well used by the population it serves (check number of calls per day). Refer to Guidelines for establishing a poison centre (WHO, 2021)

- Sustain a mechanism to ensure response capacity<sup>160</sup> at national and subnational levels.
- Support research programmes to generate evidence on surveillance, alert and response to chemical events or emergencies.
- Share country experience in surveillance, alert and response to chemical events or emergencies and engage the country in peer-to-peer learning programmes at the subnational, national and international levels.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7

## Tools:

- Chemicals road map: workbook. Geneva: World Health Organization; 2018 (<https://apps.who.int/iris/handle/10665/273136>).
- IOMF tool box for decision making in chemicals management. OECD (<https://www.iomtoolbox.org/>).
- WHO Manual for the Public Health Management of Chemical Incidents. Geneva: World Health Organization; 2009 (<https://www.who.int/publications/i/item/9789241598149>).
- International Health Regulations (2005) and chemical events. Geneva: World Health Organization; 2015 (<https://apps.who.int/iris/handle/10665/249532>).
- Guidelines for establishing a poison centre. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/338657>).
- Manual for investigating suspected outbreaks of illnesses of possible chemical etiology: guidance for investigation and control. Geneva: World Health Organization; 2021 (<https://www.who.int/publications/i/item/9789240021754>).
- Initial clinical management of patients exposed to chemical weapons: interim guidance document. Geneva: World Health Organization; 2014 (<https://apps.who.int/iris/handle/10665/329541>).
- Chemical releases caused by natural hazard events and disasters: information for public health authorities. Geneva: World Health Organization; 2018 (<https://apps.who.int/iris/handle/10665/272390>).

<sup>160</sup> This includes setting minimum requirements for: local emergency planning and response activities (i.e. arrangements for scaling up capabilities of local emergency response, national support mechanisms and infrastructure and alerting mechanisms); inspection of hazardous sites and assessment of emergency plans; and operators to comply and liaison with local governments. see also: WHO manual: The public health management of chemical incidents. Geneva: World Health Organization; 2009.

- International Chemical Safety Cards (ICSCs) [database]. Geneva: International Labour Organization; 2018 (<https://www.ilo.org/dyn/icsc/showcard.listCards3>).
- International Programme on Chemical Safety and Organisation for Economic Co-operation and Development (IPCS). IPCS risk assessment terminology. Geneva: World Health Organization; 2004 (<https://apps.who.int/iris/handle/10665/42908>).
- Simulation exercises [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/emergencies/operations/simulation-exercises>).
- WHO simulation exercise manual: a practical guide and tool for planning, conducting and evaluating simulation exercises for outbreaks and public health emergency preparedness and response. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254741>).
- Guidance for after action review (AAR). Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/311537>).
- Guidance for conducting a country COVID-19 intra-action review. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/333419>).

# 19

## Radiation emergencies

States Parties will have surveillance and response capacity for radiological and nuclear emergencies. This requires effective coordination, communication and collaboration among all sectors involved in radiation emergency preparedness and response, including health, industry, transport, environmental protection, food safety and consumer protection, law enforcement, civil defence and others.



### **IMPACT:**

Timely detection and effective response to potential radiological and nuclear emergencies with cross-sectoral coordination.



### **MONITORING AND EVALUATION:**

Mechanisms and an enabling environment are established and functioning for preventing, detecting and responding to radiological and nuclear emergencies.

<b>BENCHMARK 19.1: Mechanisms are in place for detecting and responding to radiological and nuclear emergencies, supported by an enabling environment</b> <b>OBJECTIVE: TO Establish policies, legislation, plans and capacities to detect and respond to radiological and nuclear emergencies</b>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● No mechanism (such as policies, plans, coordination and communication) is in place for the detection, assessment and response to radiation emergencies.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Conduct a comprehensive assessment of potential radiological risks in the country, identify potential radiation emergency scenarios and map high risk areas, most vulnerable regions and sites.</li> <li>● Review and identify gaps in legislation, policies and plans for the detection, assessment and response to radiation emergencies.</li> <li>● Identify key technical experts from relevant sectors to develop technical guidelines or SOPs for the management of radiation emergencies (including risk assessment, reporting, event confirmation, notification and investigation).</li> <li>● Develop policies, strategies, costed plans and SOPs for the detection, assessment and response to radiation emergencies, including provisions for coordination and communication between relevant national authorities clearly indicating roles and responsibilities (including those for the health authorities and IHR national focal points).</li> <li>● Disseminate policies, plans and legislation for radiological event surveillance, alert and response to relevant stakeholders.</li> <li>● Develop capacity to monitor radiation exposure in the environment, food and drinking water.</li> <li>● Identify medical countermeasures required for radiation emergencies depending on the national risk profile, and develop a plan for procurement or access to such countermeasures.</li> <li>● National competent authority licenses all activities involving radiation sources and collects and maintains a database of available information on existing and potential radiological or nuclear hazards at the national and subnational levels.</li> <li>● Identify, map and maintain a directory of stakeholders (including public and private sector) involved in all activities using, generating, or disposing radiation and radioactive sources and responsible for radiation related hazards and emergency responses.</li> </ul>



- Establish a multidisciplinary cross-sectoral coordination mechanism including sectors involved in radiation protection, nuclear safety, meteorological services, environment, food safety, health, trade, travel, law enforcement, civil defence, security and other relevant sectors involved in the surveillance, alert and response to radiation emergencies at the national and subnational levels according to the national emergency response plan.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8, 9, 10

## 03 DEVELOPED CAPACITY

- Develop, evaluate and/or update technical guidelines or SOPs for the management of radiation emergencies (including risk assessment, reporting, event confirmation and notification, and investigation).
- Procure and establish access to a national stockpile of medical supplies required for nuclear and radiation emergency countermeasures (as recommended by the WHO policy advice on stockpiles, 2023), and develop SOPs for use, storage, deployment and replenishment.
- Designate health facilities and develop/maintain the capacity for clinical management of radiation injuries and plan for building sustainable capacity for healthcare facility response to radiation emergencies.
- Develop case management guidelines to manage radiation injuries, contaminated casualties and internal contamination (either as a standalone guideline or as part of the case management guidelines for all hazards).
- Train relevant health workers on the protocols and guidelines including management of radiation injuries, handling of contaminated casualties and radioactive waste in hospitals and ensure health facilities have arrangements in place to support these actions.
- Develop a mechanism for systematic information exchange between competent radiological authorities and human health surveillance units about radiological events and potential risks.
- Develop mechanisms to alert the population in a nuclear emergency (as well as for other disasters and emergencies) and disseminate recommendations, taking into account the potential shutdown or failure of classic communication channels.
- Develop policies, protocols and strategies for national and international transport of radioactive materials, samples and waste management and ensure the logistical requirements for transportation are in place.
- Develop guidelines for the management of radiological waste including that from hospitals and medical services.
- Establish a waste management site with the required capacity for monitoring it.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8, 9, 10

## 04 DEMONSTRATED CAPACITY

- Establish arrangements to rapidly facilitate the monitoring of populations at risk of having been contaminated in order to mitigate contamination as necessary and/or provide reassurance that people are not contaminated at levels which require mitigation.
- Develop and conduct emergency response drills, SimEx/AAR/IAR (as relevant) on radiation emergencies and update the response plan, mechanisms and guidelines accordingly.
- Respond to any radiological threats with joint risk assessment, investigation and implementation of the response plan.
- Share information with relevant stakeholders regularly on the risk and threats that are potential for emergencies.
- Regularly monitor (quantity and quality) of the national stockpile of medical nuclear and radiation emergency countermeasures.
- Expand health facilities with capacity to manage patients of radiation emergencies.
- Provide arrangements for evacuation and relocation plans for high risk regions, premises and facilities by national competent authority.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7

## 05 SUSTAINABLE CAPACITY

- Document and disseminate best practices of test results and reviews.
- Conduct regular training of staff of health facilities to manage patients in the event of a radiation emergency.
- Regularly review and adapt response plan, mechanisms and guidelines based on findings from emergency response drills and SimEx/AAR/IAR (as relevant).
- Sustain a mechanism to establish the response capacity at national and subnational levels.
- Support research programmes to generate evidence for detecting and responding to radiological and nuclear emergencies for planning, prioritizing and decision-making processes.
- Share country experiences in surveillance, alert and response to radiological or nuclear events or emergencies and play a mentoring role with other countries.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6

## Tools:

- Food and Agriculture Organization of the United Nations, International Atomic Energy Agency, International Civil Aviation Organization, International Labour Organization, International Maritime Organization, Interpol, OECD Nuclear Energy Agency, Pan American Health Organization, Preparatory Commission of the Comprehensive Nuclear-Test-Ban Treaty Organization, United Nations Environment Programme, United Nations Office for the Coordination of Humanitarian Affairs, World Health Organization, World Meteorological Organization. Preparedness and Response for a Nuclear or Radiological Emergency. IAEA Safety Standard Series No. GSR Part 7. Vienna: IEAA; 2015 (<https://www.iaea.org/publications/10905/preparedness-and-response-for-a-nuclear-or-radiological-emergency>).
- Considerations in the Development of a Protection Strategy for a Nuclear or Radiological Emergency, Emergency Preparedness and Response. Vienna: IAEA; 2021 (<https://www.iaea.org/publications/14801/considerations-in-the-development-of-a-protection-strategy-for-a-nuclear-or-radiological-emergency>).
- Iodine thyroid blocking: Guidelines for use in planning for and responding to radiological and nuclear emergencies. Geneva: World Health Organization; 2017 (<https://www.who.int/publications/i/item/9789241550185>).
- TMT Handbook. Handbook for the management of the public in the event of a malevolent use of ionising radiation. Norway: SCK CEN, Norwegian Radiation Protection Authority, Health Protection Agency, Radiation and Nuclear Safety Authority, World Health Organization, Enviros Consulting Ltd, Central Laboratory for Radiological Protection; 2009 ([www.tmt handbook.org](http://www.tmt handbook.org)).
- Radiation Emergencies [website]. Geneva: World Health Organization; 2023 ([https://www.who.int/health-topics/radiation-emergencies/#tab=tab\\_1](https://www.who.int/health-topics/radiation-emergencies/#tab=tab_1)).
- Incident and Emergency Center [website]. Vienna: IAEA; 2023 (<https://www.iaea.org/about/organizational-structure/department-of-nuclear-safety-and-security/incident-and-emergency-centre>).
- International Atomic Energy Agency [website]. Vienna: IAEA; 2023 (<https://www.iaea.org/>).
- IAEA safety glossary: 2018 edition. Vienna: IAEA; 2019 (<https://www.iaea.org/publications/11098/iaea-safety-glossary-2018-edition>).
- National stockpiles for radiological and nuclear emergencies: policy advice. Geneva: World Health Organization; 2023 (<https://www.who.int/publications/i/item/9789240067875>).
- Simulation exercises [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/emergencies/operations/simulation-exercises>).
- WHO simulation exercise manual: a practical guide and tool for planning, conducting and evaluating simulation exercises for outbreaks and public health emergency preparedness and response. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254741>).
- Guidance for after action review (AAR). Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/311537>).
- Guidance for conducting a country COVID-19 intra-action review. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/333419>).

# 20

## Public health and social measures

Public health and social measures (PHSM) are nonpharmaceutical interventions implemented by individuals, communities, governments and institutions to reduce the risk and scale of epidemic- and pandemic-prone infectious disease transmission. They range from surveillance, contact tracing, mask wearing and physical distancing to social measures, such as restricting mass gatherings and modifying school and business openings and closures. PHSM play an immediate and critical role throughout the different stages of health emergencies and contribute to decreasing the burden on health systems so that essential health services can continue and effective vaccines and therapeutics can be developed and deployed with their effects maximized to protect the health of communities. If PHSM are not implemented with a focus on equity and consideration of risks and benefits, they can have unintended negative consequences on the health and well-being of individuals, societies and economies, such as by increasing loneliness, food insecurity, the risk of domestic violence and reducing household income and productivity.



### IMPACT:

PHSM are systematically integrated into health emergency management plans, policies, financing, governance and leadership in all relevant sectors at national, subnational and community levels across the health emergency actions, with consideration for interventions that are evidence-driven, context-specific and sensitive to trade-offs between benefits and unintended negative consequences for individuals and communities.



### MONITORING AND EVALUATION:

- (1) Establishment of a functional, multisectoral and multilevel (i.e. from the national government to the community level) structure for coordination and integration of PHSM in existing governance and leadership mechanisms.
- (2) Context-specific, evidence-driven decisions on introducing, adjusting and lifting PHSM, including systematic considerations to trade-offs between health benefits and unintended negative consequences.
- (3) Establishment of a vertical governance mechanism to ensure sufficient communication and coordination between levels of government (community, subnational and national) for PHSM.

<b>BENCHMARK 20.1: Leadership and governance dedicated to public health and social measures (PHSM) is in place in relevant sectors, at all levels and between levels</b> <b>OBJECTIVE: To establish and strengthen functional, multisectoral leadership and governance for PHSM that is embedded in health emergency preparedness, response management and health system strengthening</b>	
CAPACITY LEVEL	BENCHMARK ACTIONS
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● No systematic, dedicated mechanism to guide implementation and adjustment of PHSM for emergency management.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Review current legislation and legal frameworks relevant to supporting and enabling PHSM implementation and identify any gaps.</li> <li>● Assess and identify gaps in capacities of health and nonhealth sectors to implement, adjust and monitor PHSM to address priority hazards for health emergencies.</li> <li>● Involve multilevel<sup>161</sup>, multisectoral stakeholders in defining national strategies for PHSM and systematically integrating PHSM in national and subnational emergency management plans/policies.</li> <li>● Form a national working group with stakeholders from relevant sectors to develop common standards and strategic work plans for health emergency preparedness and response.</li> <li>● Link continuous risk assessments of epidemiological changes, health system capacity and contextual factors to PHSM policy design, to inform the introduction, adjustment and phasing out of PHSM at national and subnational levels.</li> <li>● Develop a mechanism to systematically include the evaluation of PHSM in health emergency AARs/IARs.</li> </ul> <p>Participation and contribution of other sectors to actions: 1, 2, 3, 4, 5, 6</p>

<sup>161</sup> *i.e. from the national government to the community level*

## 03 DEVELOPED CAPACITY

- Establish a dedicated PHSM team in the health ministry to coordinate and manage PHSM strategic and operational activities, including PHSM policy monitoring and advice, coordination, leadership and research.
- Form an interdisciplinary, multilevel expert advisory group at the national level to maximize the use of best available evidence on PHSM and employ precautionary principles when robust context-specific data and research are limited to enable and strengthen evidence-informed decision-making for PHSM.
- Initiate multilevel, multisectoral tracking of PHSM policy, implementation and adherence at the beginning of a health emergency and maintain tracking to inform adjustment and phasing out of PHSM as required.
- Regularly assess the benefits versus unintended negative consequences of PHSM during health emergencies and implement relevant social protection policies to reduce negative consequences across health, social and economic factors.
- Train and provide ongoing development opportunities for policy-makers and practitioners in health and nonhealth sectors to introduce, implement, adjust and phase out context specific, equitable and balanced PHSM policies.
- Systematically integrate PHSM indicators into existing M&E efforts for health emergency management and health systems core capacities.
- Conduct AARs/IARs for PHSM policy, implementation, adjustment and adherence including experts from relevant sectors, communities and professional associations.
- Secure staff, funds, materials and facilities to mainstream and strengthen PHSM in health emergency management while identifying resources and developing mechanisms to swiftly raise and allocate funds for rapid expansion of country capacity for PHSM during health emergencies.

Participation and contribution of other sectors to actions:  
1, 2, 3, 4, 5, 6, 7, 8

- Systematic involvement from all relevant stakeholders in PHSM leadership and governance including M&E, reporting and strategic planning.
- Regularly share timely information from PHSM focal points in relevant sectors to help inform PHSM actions.



## 04 DEMONSTRATED CAPACITY

- Review and adjust PHSM policies and implementation based on timely and regular assessment of data through close community engagements and communicate effectively and transparently to the public.
- Develop a sustainable financial and human resource plan at all levels for PHSM coordination.
- Routinely monitor PHSM and related population response and uptake in a harmonized manner.
- Expand partnerships for a whole-of-society approach for collaborative capacity-building, strategic planning and monitoring of PHSM.
- Develop partnerships with and build core capacities of CSOs and community leaders to increase community engagement, trust and adherence to PHSM.
- Develop a national research agenda for PHSM and provide support to conduct studies to measure the effectiveness, impact and contextual factors related to PHSM.
- Utilize a whole-of-society, whole-of-government approach to integrate PHSM in NHPSPs.
- Establish whole-of-government mechanisms with well defined governance and mandates to implement relevant PHSM.

Participation and contribution of other sectors to actions:

1, 2, 3, 4, 5, 6, 7, 8

- Establish a coordinating team among PHSM focal points in all relevant sectors and identify a network of experts from relevant disciplines for collaboration and consultation on PHSM.
- Integrate policies and strategies to strengthen research capacities in nonhealth sectors and catalyse PHSM research, including studies on the social and economic impacts of PHSM.

## 05 SUSTAINABLE CAPACITY

- Review and adjust existing legislation, regulations, mechanisms and mandates of all relevant sectors based on M&E outcomes for effective implementation of PHSM.
- Establish and continuously update a network of multidisciplinary experts trained in precautionary principles, risk-based approaches, evidence synthesis and knowledge translation for multihazard PHSM decisions before emergencies and activation during health emergencies.
- Disseminate good practices, lessons learned and outcomes of PHSM among experts, decision-makers, community, etc. in consideration of contextual factors.
- Document and share lessons learned and experiences in implementing and improving PHSM by engaging the country in peer-to-peer learning programmes at the subnational, national and international levels.



- Provide strategic and technical support to other countries as requested including through bilateral and regional arrangements.

Participation and contribution of other sectors to actions:

- 1, 2, 3, 4, 5
- Establish plans for whole-of-society approaches to fully engage communities in PHSM decisions and implementation.
  - Collaboration across all relevant sectors to develop legislation and policies that offer adequate social protection for individuals and communities, especially those in vulnerable conditions, to mitigate social and economic consequences of PHSM.

## Tools:

- Non-pharmaceutical public health measures for mitigating the risk and impact of epidemic and pandemic influenza. Geneva: World Health Organization; 2019 (<https://www.who.int/publications/i/item/non-pharmaceutical-public-health-measures-for-mitigating-the-risk-and-impact-of-epidemic-and-pandemic-influenza>).
- Considerations for implementing and adjusting public health and social measures in the context of COVID-19. Interim guidance – 30 March 2023. Geneva: World Health Organization; 2023 (<https://www.who.int/publications/i/item/who-2019-ncov-adjusting-ph-measures-2023.1>).
- Measuring the effectiveness and impact of public health and social measures [website]. Geneva: World Health Organization; 2023 (<https://www.who.int/activities/measuring-the-effectiveness-and-impact-of-public-health-and-social-measures>).
- Report of the WHO global technical consultation on public health and social measures during health emergencies: online meeting, 31 August to 2 September 2021. Geneva: World Health Organization; 2021 (<https://apps.who.int/iris/handle/10665/352096>).
- Guidance for after action review (AAR). Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/311537>).
- Guidance for conducting a country COVID-19 intra-action review. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/333419>).

## **Additional benchmarks for health emergency capacities beyond IHR**

The 62 benchmarks above focus on strengthening health emergency capacities for IHR and HEPR, the following 18 additional benchmarks focus on HEPR capacities beyond IHR. Please see Annex 2 for mapping of all benchmarks against IHR MEF (JEE and SPAR) and HEPR.

### **Collaborative surveillance**

#### **Health service capacity, access and usage monitoring**

Collaborative surveillance objectives include establishing comprehensive surveillance mechanisms that encompass various health-related factors to detect and monitor diseases, threats and vulnerabilities. By implementing such systems, countries can enhance their ability to identify and respond to emerging health risks in a timely and effective manner. Health service monitoring is an integral component to achieve this, working in conjunction with public health surveillance to enhance emergency preparedness and response. Enhancing these systems may provide a dynamic assessment of health system resilience, enabling effective emergency planning and response efforts by informing the optimization of healthcare services and interventions, and contributing to response monitoring activities.

Health service monitoring complements public health surveillance for emergency preparedness and response by providing a dynamic picture of the resilience of health systems, this includes: regular monitoring and reporting of key metrics on health service capacities, access and usage to provide a dynamic picture of contemporary and projected system resilience; and health service monitoring capacities interconnected with response mechanisms, with the necessary flexibility to surge and adapt surveillance to all types of emergencies, including capacity to rapidly assess impacts of major disasters. Data derived from the monitoring of health service capacity, access and usage should be systematically integrated with contextual insights, including insights on risk and vulnerability, derived from other diverse sources of data.

**IMPACT:**

Health emergency management is enhanced by monitoring health service availability, capacity, access and usage, alongside complementing public health surveillance, to respond in a more timely and effective manner.

**MONITORING AND EVALUATION:**

(1) Key metrics related to health service availability, capacities, access and usage are defined and monitoring implemented. (2) Health service availability, capacities, access and usage monitoring is integrated and intraoperational with specialized health information systems<sup>162</sup>. (3) Health service monitoring as an integral part of the healthcare system.

<sup>162</sup> Such as health management and information systems, logistic management and information systems, human resources information system, health facility registry, and routine surveillance systems and community-based surveys.

<b>BENCHMARK H1.1: A resilient monitoring system is established and fully functional to routinely monitor the key metrics of health service availability, capacity, access and usage</b> <b>OBJECTIVE: To establish a systematic routine monitoring mechanism of key metrics for health service availability capacity, access and usage, aiming to support effective health emergency preparedness, planning and response efforts</b>	
CAPACITY LEVEL	BENCHMARK ACTIONS
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● There are no existing mechanisms for systematic routine monitoring of key metrics for health service availability, capacity, access and usage, or efforts are ad hoc.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Assess existing monitoring systems for health service capacity, access and usage to identify gaps, strengths and areas for improvement.</li> <li>● Form steering and technical working committees (with ToR) to develop a national health service capacity, access and usage monitoring framework, including the context of emergencies.</li> <li>● Define the key metrics of health service capacity, access and usage to be incorporated into the national monitoring framework and identify existing and new data sources for monitoring the key metrics.</li> <li>● Assign a nodal agency/entity responsible for coordination and communication in relation to development and implementation of the monitoring framework.</li> <li>● Conduct stakeholder analysis within and beyond health sectors for monitoring of health service capacity, access and usage.</li> <li>● Explore pathways for community engagement to incorporate local level readiness and capacities into the national monitoring framework.</li> <li>● Collect, compile and analyze lessons learned from health emergencies to inform data sources, analysis and utilization of key metrics related to health service capacity, access and usage, with a particular focus on health emergency management and the continuity of essential health services.</li> </ul>
<b>03</b> <b>DEVELOPED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Develop a national health service capacity, access and usage monitoring framework that illustrates strategies, approaches, tools and resources to systematically monitor the defined key metrics for health service availability, capacity, access and usage.</li> <li>● Identify, adapt and implement internationally recommended standards and tools to ensure consistent and accurate data collection.</li> </ul>

- Establish mechanisms to connect routine health information systems, including health service monitoring, with the public health surveillance system to facilitate data integration and sharing.
- Develop a data governance and sharing policy along with a data quality and structure assurance mechanism to facilitate data sharing and quality.
- Develop capacity-building trainings, services and resources for the collection, analysis and interpretation of data for relevant health personnel.
- Design a mechanism to facilitate interconnectedness between health service monitoring capacities and health emergency response mechanisms, to support a coordinated and agile health emergency response.
- Foster collaboration and information sharing among health and other relevant sectors to enhance coordination and data exchange for health service monitoring.
- Develop and implement community engagement strategies to actively involve local communities in health service capacity, access and usage monitoring.

## 04 DEMONSTRATED CAPACITY

- Implement the national health service capacity, access and usage monitoring framework in a phased manner across all levels (national, subnational and local).
- Enable integration and interoperability of key metrics of health service availability, capacity, access and usage in routine specialized health information systems such as health management and information systems, logistic management and information systems, human resources information systems, health facility registries, and routine surveillance systems and community-based surveys.
- Implement capacity-building initiatives and training programs aimed at enhancing the skills and knowledge of relevant healthcare personnel.
- Conduct periodic evaluations and audits of the monitoring systems to assess effectiveness and identify opportunities for improvement.
- Conduct periodic surveys/SimEx/AAR/IAR (as relevant) to explore factors of service utilization, barriers to access and community needs during and after emergencies.
- Develop and implement protocols and systems that enable seamless data sharing and communication between health service monitoring and emergency response entities.
- Explore and implement innovative technologies and approaches for data analytics, data quality and real time reporting, to further enhance the timeliness, accuracy and flexibility of health service monitoring to respond to diverse emergencies with minimal impact on routine data collection.

	<ul style="list-style-type: none"> <li>● Enhance community collaboration to optimize information collection on vulnerability, risk mapping, demand and access to health services.</li> <li>● Increase collaborative partnerships with nonhealth sectors to facilitate efficient monitoring of health service availability, capacity, access and usage during health emergencies.</li> </ul>
<h2>05 SUSTAINABLE CAPACITY</h2>	<ul style="list-style-type: none"> <li>● Regularly review and update the national health service capacity, access and usage monitoring framework to adapt to evolving health challenges, emerging needs and M&amp;E outcomes.</li> <li>● Institutionalize health service monitoring as an integral part of the healthcare system, ensuring dedicated resources and funding for long term sustainability.</li> <li>● Conduct regular M&amp;E to assess the integration and interoperability of health service monitoring and public health surveillance.</li> <li>● Regularly engage in capacity-building initiatives and training programs to further enhance the skills and knowledge of relevant healthcare personnel.</li> <li>● Consolidate and strengthen community collaboration for comprehensive information collection on vulnerability, risk mapping, and the demand and access of health services.</li> <li>● Promote knowledge sharing and best practices through regional and global networks, contributing to the advancement of health service monitoring methodologies.</li> </ul>

### Tools:

- Defining collaborative surveillance: a core concept for strengthening the global architecture for health emergency preparedness, response, and resilience (HEPR). Geneva: World Health Organization; 2023 (<https://www.who.int/publications/i/item/9789240074064>).
- “Crafting the mosaic” a framework for resilient surveillance for respiratory viruses of epidemic and pandemic potential. Geneva: World Health Organization; 2023 (<https://www.who.int/publications/i/item/9789240070288>).
- Health Service Data. World Health Organization. (<https://www.who.int/data/data-collection-tools/health-service-data>)
- SCORE for Health Data Technical Package. World Health Organization. (<https://www.who.int/data/data-collection-tools/score>)
- Sharing and reuse of health-related data for research purposes: WHO policy and implementation guidance. Geneva: World Health Organization; 2022 (<https://www.who.int/publications/i/item/9789240044968>).

- Social innovation in health monitoring and evaluation framework. Geneva: World Health Organization; 2021 (<https://fctc.who.int/publications/item/social-innovation-in-health-monitoring-and-evaluation-framework>).
- Analyzing and using routine data to monitor the effects of COVID-19 on essential health services, A Practical guide for national and subnational decision-makers, interim guidance, Geneva: World Health Organization; 2021 (<https://www.who.int/publications/item/who-2019-nCoV-essential-health-services-monitoring-2021-1>)
- Primary health care measurement framework and indicators: monitoring health systems through a primary health care lens. Geneva: World Health Organization and the United Nations Children's Fund (UNICEF); 2022. Licence: CC BY-NC-SA 3.0 IGO (<https://www.who.int/publications/item/9789240044210>)
- Harmonized Health Facility Assessment (HHFA). World Health Organization. (<https://www.who.int/data/data-collection-tools/harmonized-health-facility-assessment/introduction>)
- 10 proposals to build a safer world together – Strengthening the Global Architecture for Health Emergency Preparedness, Response and Resilience Geneva: World Health Organization; 2022 (<https://www.who.int/publications/m/item/10-proposals-to-build-a-safer-world-together---strengthening-the-global-architecture-for-health-emergency-preparedness--response-and-resilience--white-paper-for-consultation--june-2022>).
- Strengthening health emergency prevention, preparedness, response and resilience. Geneva: World Health Organization; 2023 (<https://www.who.int/publications/m/item/strengthening-the-global-architecture-for-health-emergency-prevention--preparedness--response-and-resilience>).
- WHO simulation exercise manual: a practical guide and tool for planning, conducting and evaluating simulation exercises for outbreaks and public health emergency preparedness and response. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254741>).
- Guidance for after action review (AAR). Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/311537>).
- Guidance for conducting a country COVID-19 intra-action review. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/333419>)



## Genomic surveillance

The goal of genomic surveillance is to strengthen and scale up the monitoring of pathogens with pandemic and epidemic potential, enabling appropriate public health actions within local to global surveillance systems. This necessitates the expansion of laboratory capacity and collaboration, particularly in the field of genomics. Robust diagnostics and laboratory capacity are crucial, allowing for swift response to emergencies and leveraging the involvement of all sectors within the One Health framework. This includes: facilitating access to genomic and phenotypic characterization of pathogens; sufficient and purpose-built laboratory capacity; implementing quality management systems for laboratory testing; and fostering an innovation and research ecosystem that responds to the local, national and global needs for affordable and scalable technologies.



### IMPACT:

Timely public health decision-making is informed by genomic surveillance for pathogens with pandemic and epidemic potential.



### MONITORING AND EVALUATION:

(1) Genomic surveillance systems are established and operational, either in country or through access to networks/regional laboratories, to analyze pathogens of pandemic and epidemic potential. (2) A national genomic surveillance strategy or action plan for pathogens with pandemic and epidemic potential is available and implemented. (3) Collaboration with global surveillance systems is established and adherence to global data sharing standards is maintained.

<b>BENCHMARK H1.2: Genomic surveillance systems are in place and functional</b> <b>OBJECTIVE: To strengthen and sustain genomic surveillance capabilities to enable timely and effective decision-making for pathogens with pandemic/epidemic potential, within a One Health framework</b>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● Genomic surveillance systems are not in place, genomic sequencing is conducted ad hoc, or the country does not have access to networks or regional laboratories with genomic sequencing capacities to support national pandemic/epidemic surveillance systems or disease control programmes<sup>163</sup>.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Identify a national multisectoral committee (with ToR) with relevant stakeholders to contribute to the strengthening of genomic surveillance and coordinate effective collaboration between stakeholders such as national public health institutes and relevant partners.</li> <li>● Map existing or potential genomic surveillance capacity within the country, including an alignment with existing laboratory capacity assessments to assess potential capability for performing genomic sequencing (facilities, personnel, equipment, logistics, etc.).</li> <li>● Map existing pathways to access a network or regional laboratory for genomic sequencing and analytical capacities, and use regional or international laboratories to conduct sequencing for pandemic/epidemic surveillance systems or disease control programmes.</li> <li>● Use genomic surveillance reports/assessments generated by WHO or international reference laboratory networks to inform local public health decisions.</li> <li>● Develop a national genomic surveillance strategy or action plan for pathogens with pandemic and epidemic potential<sup>164</sup>, including identifying the key pandemic/epidemic genomic surveillance use cases relevant to country context.</li> <li>● Develop material and mechanism to advocate for the integration of genomic surveillance for routine pandemic/epidemic surveillance systems or disease control programmes.</li> </ul>

<sup>163</sup> Pandemic/epidemic surveillance systems or disease control programme use cases include, but are not limited to, SARS-CoV-2, influenza, arbovirus, cholera, viral haemorrhagic fevers, polio, measles and rubella.

<sup>164</sup> Considerations for developing a national genomic surveillance strategy or action plan for pathogens with pandemic and epidemic potential. Geneva: World Health Organization; 2023. Licence: CC BY-NC-SA 3.0 IGO

## 03 DEVELOPED CAPACITY

- Implement the national genomic surveillance strategy or action plan for pathogens with pandemic/epidemic potential, including the development or implementation of guidelines, procedures and tools to support effective implementation.
- Increase access to efficient sampling, collection, sequencing, analysis, interpretation and surge capacities, through access to networks and regional laboratories, and continue to regularly use regional or international laboratories to conduct sequencing for pandemic/epidemic surveillance systems or disease control programmes until capacities are developed within the country.
- Identify relevant (WHO) global standards on data sharing for genomic surveillance and establish mechanisms to align current agreements, data sharing platforms and privacy protection as relevant.
- Continue to use genomic surveillance reports/assessments generated by WHO or international reference laboratory networks to inform local public health decisions.
- Conduct advocacy to relevant stakeholders, including multisectoral ministries, agencies and funding agencies to support implementation of national strategy or action plan.
- Establish collaborations with international reference laboratories, research networks or training/knowledge exchange platforms to support the use of genomic surveillance as part of pandemic/epidemic surveillance system or disease control programmes.

## 04 DEMONSTRATED CAPACITY

- Regularly revise the national genomic surveillance strategy or action plan to reflect current threats and adapt to potential future threats, and relevant related guidelines, procedures and tools are assessed regularly and updated accordingly.
- Increase in-country sequencing infrastructure<sup>165</sup> and human workforce for sequencing or access to regional or international laboratories as part of pandemic/epidemic surveillance systems or disease control programmes.
- Generate and use genetic sequencing data to inform risk assessments and public health decisions both locally and regionally/globally.
- Test the quality and timeliness of the national genomic surveillance system through SimEx/AAR/IAR (as relevant) to confirm the system's readiness for a novel pathogen response.
- Participate in quality assessment programmes in genomic sequencing.
- Apply global data access principles, agreements and standards for responsible use of genetic sequence data.

<sup>165</sup> Including sufficient, stable and secure data management systems.

- Advance collaborations with international reference laboratories, research networks and training/knowledge exchange platforms to support use of genomic surveillance as part of pandemic/epidemic disease control programmes and participate in relevant training programmes.

- Establish national financing for at least one genomic surveillance pandemic/epidemic use case.

- Participate in genomic surveillance global/regional norms, standards and system setting activities.

- Review and update the national genomic surveillance strategy or action plan based on M&E outcomes.

- Establish a network of national and subnational laboratories that provide specimens or genomic data in a timely manner to inform national genomic surveillance objectives for priority pandemic/epidemic pathogen use cases.

- Routinely test the quality and timeliness of the national genomic surveillance system through SimEx/AAR/IAR (as relevant) to confirm the system's readiness for a novel pathogen response.

- Routinely participate in quality assessment programmes for genomic sequencing, and implement a national quality assessment programme if appropriate.

- Routinely apply data access principles, agreements and standards for responsible use of genetic sequence data.

- Generate and use genetic sequencing data to inform risk assessments and public health decisions both locally and regionally/globally.

- Secure national financing for all priority pandemic/epidemics genomic surveillance use cases.

- Use national expertise in genomic surveillance to drive, inform and guide global norms, standards and systems.

## 05 SUSTAINABLE CAPACITY

### Tools:

- Global genomic surveillance strategy for pathogens with pandemic and epidemic potential, 2022–2032. Geneva: World Health Organization; 2022 (<https://www.who.int/publications/i/item/9789240046979>).
- Considerations for developing a national genomic surveillance strategy or action plan for pathogens with pandemic and epidemic potential. Geneva: World Health Organization; 2023 (<https://www.who.int/publications/i/item/9789240076563>).
- 10 proposals to build a safer world together – Strengthening the Global Architecture for Health Emergency Preparedness, Response and Resilience. Geneva: World Health Organization; 2022 (<https://www.who.int/publications/m/item/10-proposals-to-build-a-safer-world-together---strengthening-the-global-architecture-for-health-emergency-preparedness--response-and-resilience--white-paper-for-consultation--june-2022>).

- Strengthening health emergency prevention, preparedness, response and resilience. Geneva: World Health Organization; 2023 (<https://www.who.int/publications/m/item/strengthening-the-global-architecture-for-health-emergency-prevention--preparedness--response-and-resilience>).
- WHO simulation exercise manual: a practical guide and tool for planning, conducting and evaluating simulation exercises for outbreaks and public health emergency preparedness and response. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254741>).
- Guidance for after action review (AAR). Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/311537>).
- Guidance for conducting a country COVID-19 intra-action review. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/333419>).

## Collaborative surveillance data systems and networks

Collaboration surveillance requires mechanisms that draw upon key surveillance dimensions to generate actionable intelligence for decision-makers. Such mechanisms are powered by innovative and multidisciplinary capabilities at national and subnational levels to forecast, detect and assess risks and monitor risk-informed response actions. By understanding risks and potential health consequences, countries can apply evidence to inform their plans and prioritize key actions to prepare for emergencies, scale up anticipatory actions and mitigate the impacts of events. The capabilities required to enable this collaborative approach include: establishing a modern public health surveillance infrastructure; the development and sharing of tools for data collection, analysis and sharing; analytical capacities represented through data visualization for interpretation and decision-making; and national multisectoral networks which support data sharing.



### IMPACT:

Event detection, risk assessment and public health decision-making is supported by collaborative surveillance systems which provide standardized, shared data that is analyzed and accessible, through a One Health approach.



### MONITORING AND EVALUATION:

- (1) Integrated, interoperable and standardized data systems and data sharing platforms are established and functional across relevant sectors.
- (2) National networks are established and functional to support data information sharing and collaboration.

BENCHMARK H1.3: Integrated, interoperable and standardized data systems and data sharing platforms are established and functional	
OBJECTIVE: To develop and maintain an integrated, interoperable, standardized data system for surveillance data sharing, integration and visual interpretation	
CAPACITY LEVEL	BENCHMARK ACTIONS
<b>01</b> NO CAPACITY	<ul style="list-style-type: none"> <li>● Integrated, interoperable and standardized data systems including data sharing platforms are not available, used on an ad hoc basis or provide inconsistent integration across a few surveillance data systems.</li> </ul>
<b>02</b> LIMITED CAPACITY	<ul style="list-style-type: none"> <li>● Conduct stakeholder mapping and establish a multisectoral committee for coordination of an integrated, interoperable, standardized data system and data sharing platform.</li> <li>● Review existing legal frameworks across relevant sectors to assess compatibility to develop integrated, interoperable, standardized data systems and data sharing.</li> <li>● Conduct analysis of existing data and surveillance systems (e.g. disease specific, veterinary and environmental surveillance) and existing data sharing mechanisms and identify opportunities and challenges for integration, interoperability and standardization.</li> <li>● Develop a national strategic plan for integration, interoperability and data standardization across data systems, including data sharing platforms and visual interpretation.</li> <li>● Identify a mechanism to develop data sharing platforms and dashboard frameworks to support data sharing and analysis.</li> <li>● Establish a communication channel with designated contact persons from relevant sectors and participating agencies/entities for effective communication and coordination.</li> <li>● Develop advocacy materials and orient relevant stakeholders on the importance of integration, interoperability, data standardizations, visual interpretation and data sharing platforms for timely communication of potential hazards and risks.</li> </ul>
<b>03</b> DEVELOPED CAPACITY	<ul style="list-style-type: none"> <li>● Disseminate to all relevant sectors, and implement the national strategic plan for integration, interoperability and data standardization across data systems, including data sharing platforms and visual interpretation.</li> <li>● Develop guidelines and SOPs for data system integration, interoperability and standardization as well as data sharing mechanisms to support implementation of the national strategic plan at the national level.</li> <li>● Develop data sharing platforms and dashboard frameworks to support data sharing and analysis.</li> </ul>



- Develop tools for visual interpretation of integrated data on data sharing platforms and dashboards, including data analyses, and ensure compatibility with existing surveillance data collection. Develop accompanying advocacy and user guides to facilitate roll out and encourage use of visual interpretations.
- Increase the number of existing surveillance data systems that share data in a standardized manner and contribute to joint analysis and visual interpretations.
- Adapt legal frameworks across relevant sectors, as required, to support integrated, interoperable, standardized data systems and data sharing.
- Develop training materials and disseminate to relevant stakeholders in health and other relevant sectors for management, use and interpretation of integrated data sharing system outputs.

## 04 DEMONSTRATED CAPACITY

- Secure ongoing budget allocation for implementation of the national strategic plan, based on costing.
- Adapt guidelines and SOPs for data system integration, interoperability and standardization as well as data sharing mechanisms to support implementation of the national strategic plan at the subnational level.
- Increase the number of surveillance data systems that share data in a standardized manner and contribute to joint analysis and visual interpretations, including at the subnational level.
- Conduct SimEx/AAR/IAR (as relevant) to evaluate data sharing, systematic integration, system intraoperability and use of visual interpretations in a real or simulated event.
- Provide available technical, institutional and human resources for the maintenance and quality assurance of integrated data sharing systems.

## 05 SUSTAINABLE CAPACITY

- Review, update and adapt the national strategic plan for integration, interoperability and data standardization across data systems, including data sharing platforms and visual interpretation based on results from M&E activities.
- Secure sustainable funding and allocation of resources on an annual basis to support sustained functionality, quality assessment, maintenance and improvements to integrated data sharing systems.
- Incorporate findings from shared data analyses and visual interpretations into national health emergency response, planning and preparedness activities on a routine basis.
- Incorporate findings from shared data analyses and visual interpretations into research conducted in the country.
- Document and share best practices for integrated data sharing systems and visual interpretations, and engage the country in peer-to-peer learning programmes at the subnational, national and international levels.

<b>BENCHMARK H1.4: Integrated networks are created and functional to support surveillance information sharing and collaboration</b> <b>OBJECTIVE: To establish and maintain national networks across relevant sectors, partners and organizations that support activities for surveillance information sharing and collaboration through establishing relationships and protocols</b>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● No national networks exist to support surveillance information sharing and collaboration, or collaboration is conducted in an ad hoc or sector-specific manner.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Conduct a comprehensive assessment of existing stakeholders, sectors, organizations and partners involved in health surveillance (including non-traditional partners) to identify potential network participants.</li> <li>● Establish a multisectoral committee (with ToR), with representatives from relevant sectors, organizations and partners involved in surveillance in the country to guide the development and maintenance of national information sharing and networks.</li> <li>● Perform an assessment of existing national networks within the country, including networks of small size or with intersectoral collaboration, to determine current networks and opportunities for growth.</li> <li>● Establish ToRs for national networks including mission, membership, meetings, secretariat, responsibilities, reporting and organization.</li> <li>● Review current country contribution to regional and global surveillance networks.</li> <li>● Promote awareness and engagement among stakeholders of the benefits of networks, emphasizing the importance of sharing information and resources to enhance collaborative surveillance.</li> </ul>
<b>03</b> <b>DEVELOPED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Networks to establish basic protocols for secure data access, confidentiality, and information and intelligence sharing to support collaboration within and between sectors relevant to surveillance. Ensure alignment with any existing national strategic plans for integration, interoperability and data standardization, including data sharing platforms and visual interpretation.</li> <li>● Networks to establish SOPs for data sharing amongst network members, with consideration to existing data systems and sharing platforms.</li> </ul>

	<ul style="list-style-type: none"> <li>● Networks to establish mechanisms to share capacities across sectors, organizations and health system levels within the country to increase overall capacity and integrate learning.</li> <li>● Develop mechanisms and opportunities to contribute to regional and global platforms' strategic agendas and knowledge exchange.</li> </ul>
<p><b>04</b> <b>DEMONSTRATED</b> <b>CAPACITY</b></p>	<ul style="list-style-type: none"> <li>● Implement protocols and SOPs developed by networks across all relevant sectors, organizations and partners to facilitate data access and information and intelligence sharing.</li> <li>● Regularly report on networks' activities, achievements and challenges.</li> <li>● Share capacities across sectors, as relevant, and across health system levels within the country to support information sharing and collaboration capacities at the national and subnational levels.</li> <li>● Participate in regional and global platforms for global surveillance networks including knowledge exchange and support for developing community trust in information.</li> <li>● Secure ongoing funding for networks, including resources from various sectors, organizations and partners.</li> </ul>
<p><b>05</b> <b>SUSTAINABLE</b> <b>CAPACITY</b></p>	<ul style="list-style-type: none"> <li>● Demonstrate that information sharing across relevant network stakeholders, resources and knowledge generated from networks was used to support health emergency management response, planning or preparedness activities.</li> <li>● Secure regular and sustainable in-country funding for ongoing collaborative surveillance networks across relevant sectors.</li> <li>● Continuously improve and refine networks' ToRs to ensure adaptability and responsiveness to emerging needs and threats, technological advancements, and evolving best practices in information sharing.</li> <li>● Document and share best practices in developing in-country networks and engage country in peer-to-peer learning programmes at the subnational, national and international levels.</li> <li>● Actively increase engagement in regional and global platforms and engage the country in international activities to support information sharing and collaboration at a global level.</li> </ul>

### Tools:

- "Crafting the mosaic": a framework for resilient surveillance for respiratory viruses of epidemic and pandemic potential. Geneva: World Health Organization; 2023 (<https://www.who.int/publications/i/item/9789240070288>).
- Cross-border collaboration on emerging infectious diseases. World Health Organization. Regional Office for South-East Asia; 2007. (<https://iris.who.int/handle/10665/204925>)

- Sharing and reuse of health-related data for research purposes: WHO policy and implementation guidance, Geneva: World Health Organization; 2023. Licence: CC BY-NC-SA 3.0 IGO (<https://www.who.int/publications/i/item/9789240044968>)
- 10 proposals to build a safer world together – Strengthening the Global Architecture for Health Emergency Preparedness, Response and Resilience Geneva: World Health Organization; 2022 (<https://www.who.int/publications/m/item/10-proposals-to-build-a-safer-world-together---strengthening-the-global-architecture-for-health-emergency-preparedness--response-and-resilience--white-paper-for-consultation--june-2022>).
- Strengthening health emergency prevention, preparedness, response and resilience. Geneva: World Health Organization; 2023 (<https://www.who.int/publications/m/item/strengthening-the-global-architecture-for-health-emergency-prevention--preparedness--response-and-resilience>).
- WHO simulation exercise manual: a practical guide and tool for planning, conducting and evaluating simulation exercises for outbreaks and public health emergency preparedness and response. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254741>).
- Guidance for after action review (AAR). Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/311537>).
- Guidance for conducting a country COVID-19 intra-action review. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/333419>)

## Community protection

### Integrated vector control

Effective vector control is a core intervention to protect communities and prevent the spread of vector-borne diseases in already vulnerable areas. Integrated community driven vector control aims to provide a standardized framework for the following areas which are crucial for preventing and controlling vector-borne diseases:

- Risk assessment and mapping of vulnerable areas: Assessment of risk during preparedness and readiness is essential to identify vulnerable areas that should be prioritized for prevention and control efforts.
- Harnessing local knowledge and data: The active use of local insights and data to inform the planning, designing and scaling of vector control tools and interventions. By incorporating context specific information, interventions can be tailored to meet the unique needs and challenges of the community.
- Mobilizing and supporting communities: Recognizing the essential role of community involvement in developing and implementing local vector control interventions through a One Health approach. By empowering communities and fostering active participation, interventions can leverage community knowledge, resources and networks for more effective and sustainable outcomes.
- Continuous review, lessons learned, and monitoring and evaluation: Ongoing assessment and learning is important in vector control interventions. By systematically reviewing interventions, capturing lessons learned, and monitoring and evaluating their impact, interventions can be refined and adapted over time to enhance local effectiveness and efficiency.



#### IMPACT:

Contextually informed, community driven vector control interventions lead to a significant reduction in vector-borne disease outbreaks.



#### MONITORING AND EVALUATION:

- (1) Communities are fully engaged during assessment, planning and designing of vector control efforts, and are effectively mobilized in intervention implementation.
- (2) Local knowledge and data inform the planning, design and scaling of vector control interventions at the community level.

<b>BENCHMARK H2.1: Integrated vector control management systems are in place</b> <b>OBJECTIVE: To establish and implement a multisectoral community integrated vector control management approach to reduce vector-borne disease outbreaks</b>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● Integrated community driven vector control management systems are not in place, or efforts are ad hoc.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Establish a multisectoral coordination committee (with ToR), with representatives from One Health, other relevant sectors and the community, to facilitate planning, design, development of vector control management systems with local knowledge and data, and community implementation of interventions.</li> <li>● Assess existing vector control efforts and data management systems for the degree of integration of community level knowledge and data into plans, policies and interventions alongside mapping key stakeholders and community engagement.</li> <li>● Conduct a risk assessment and vulnerability mapping for vector-borne diseases, if not already available.</li> <li>● Establish mechanisms for community engagement and communication, including channels for local knowledge and data to be integrated into vector control management systems, to facilitate risk communication, and to mobilize communities toward joint assessment and identification of contextualized interventions.</li> <li>● Develop a national strategy for community engagement and mobilization in vector control.</li> </ul>
<b>03</b> <b>DEVELOPED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Develop and implement integrated community driven vector control strategies and plans that can be tailored to meet the needs and challenges of a community, and which provide a channel for local knowledge and data integration.</li> <li>● Develop, or update, the national vector surveillance system to include vector control efforts and outbreak preparedness and response through integrated community driven vector control management systems.</li> <li>● Integrate the national strategy for community engagement and mobilization in vector control into relevant national health security plans and policies.</li> <li>● Establish robust systems for M&amp;E of integrated vector control management systems, including local data collection, analysis and reporting and community engagement, to assess the coverage and effectiveness of vector control interventions.</li> </ul>

- Establish collaborative networks among entomologists, vector-borne disease control experts, social/behavioural scientists, programme/project managers and community groups to facilitate knowledge sharing, joint analysis and coordinated vector control efforts.
- Assess workforce and expertise in the control of vectors and reservoirs, including local and community levels.
- Establish proactive and strategic communication with relevant ministries to secure support for mobilizing national resources, and if necessary, external resources, to ensure the allocation of sufficient funding for the implementation of community integrated vector control efforts.
- Develop and conduct training programs and workshops to build the capacity of communities, health professionals, and vector control personnel in implementing integrated community driven vector control interventions through a One Health approach.

## 04 DEMONSTRATED CAPACITY

- Expand implementation of integrated community driven vector control interventions as per guiding strategies and plans, considering best practices relevant or adaptable to the local context.
- Continue to engage and mobilize communities to develop and implement local vector control interventions and harness local knowledge for integrated vector control management systems through a One Health approach.
- Scale up vector control strategies, tools and interventions at national and subnational levels to extend reach all at risk areas.
- Allocate funding from various sources, including government budgets, grants and partnerships, to support the implementation and scaling up of integrated vector control interventions.
- Integrate local data with national vector surveillance systems and health information systems to guide vector control efforts and outbreak preparedness and response at the community level.
- Conduct regular M&E of integrated vector control management systems, including local data collection, analysis and reporting, and community engagement.
- Conduct SimEx/AAR/IAR (as relevant) for integrated community driven vector control strategies and plans and functionality at the community level.



## 05 SUSTAINABLE CAPACITY

- Regularly review and update integrated vector control strategies, plans and interventions based on findings from M&E activities to ensure local involvement in implementation and effective collection and use of local knowledge and data. Customize vector control strategies and plans by adapting to the specific needs and circumstances of local context.
- Sustain community engagement and participation in vector control activities through ongoing communication, education and involvement in planning, design and development of vector control management systems and implementation of interventions.
- Conduct research, development and innovation to support improvement in integrated vector control tools, strategies and technologies, and participate in relevant international forums.
- Secure sustainable financing mechanisms through domestic budgets and by exploring innovative financing options.

### Tools:

- 10 proposals to build a safer world together – Strengthening the Global Architecture for Health Emergency Preparedness, Response and Resilience Geneva: World Health Organization; 2022 (<https://www.who.int/publications/m/item/10-proposals-to-build-a-safer-world-together---strengthening-the-global-architecture-for-health-emergency-preparedness--response-and-resilience--white-paper-for-consultation--june-2022>).
- Strengthening health emergency prevention, preparedness, response and resilience. Geneva: World Health Organization; 2023 (<https://www.who.int/publications/m/item/strengthening-the-global-architecture-for-health-emergency-prevention--preparedness--response-and-resilience>).
- WHO simulation exercise manual: a practical guide and tool for planning, conducting and evaluating simulation exercises for outbreaks and public health emergency preparedness and response. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254741>).
- Guidance for after action review (AAR). Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/311537>).
- Guidance for conducting a country COVID-19 intra-action review. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/333419>).
- Global vector control response 2017–2030. Geneva: World Health Organization; 2017 (<https://www.who.int/publications/i/item/9789241512978>).

## Community access to water, sanitation and hygiene (WASH)

Community access to safe water, sanitation and hygiene (WASH) interventions are crucial before, during and after health emergencies to support prevention, preparedness, response and resilience. To achieve this, actions are mainly focused on needs assessment and planning, implementation, and monitoring and evaluation of community driven WASH interventions. Active community engagement and participation in these actions are essential for effective ownership and implementation, including tailoring interventions to local needs and the continuous improvement of WASH interventions.

- Needs assessment, planning and designing: By planning and designing WASH interventions in collaboration with communities, interventions can be designed to meet specific needs and preferences. A collaborative approach considers the results of risk and needs assessments and adapts established guidelines, best practices and available tools to the local context.
- Implementation: Implementation of safe community WASH services includes the provision of safe drinking water, toilets, hygiene facilities and hygiene promotion training. The process should prioritize safe management of WASH facilities in communities and community health facilities before, during and after health emergencies.



### IMPACT:

Community driven WASH interventions foster sustainability and resilience, and result in improved health outcomes and enhanced overall well-being through WASH-related diseases being significantly reduced.



### MONITORING AND EVALUATION:

(1) Community engagement is at the forefront of needs assessment, planning and designing WASH interventions, ensuring active community involvement and ownership throughout the process. (2) WASH interventions are tailored to local needs and continuously improved, integrating results from risk and rapid needs assessment and ongoing community participation to ensure effectiveness and relevance to local context.

<b>BENCHMARK H2.2: Community driven water, sanitation and hygiene (WASH) interventions are in place and effective</b> <b>OBJECTIVE: To develop community capacities in planning, implementation and monitoring of safe WASH interventions to ensure sustainable access to facilities</b>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● Community driven effective WASH interventions are not in place or efforts are ad hoc.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Conduct a situational analysis to understand the community's water, sanitation and hygiene needs, considering existing infrastructure, resources, local practices, vulnerable areas and water sources.</li> <li>● Engage key stakeholders, such as community members, local authorities and CSOs, to identify priorities and challenges related to WASH interventions.</li> <li>● Collaborate with local stakeholders, including government agencies, NGOs, international organizations and community leaders, to establish partnerships and leverage resources to support WASH interventions.</li> <li>● Set up a coordination mechanism, with defined roles and responsibilities, to ensure active community participation in the development and implementation of WASH interventions.</li> </ul>
<b>03</b> <b>DEVELOPED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Develop national policies for community WASH, including governance mechanisms, financing and monitoring, as well as the maintenance and scaling up of interventions during emergencies.</li> <li>● Conduct an assessment of WASH specific needs at the community level using relevant tools to identify areas requiring adaptations or improvement according to local context. Includes risk assessment, hazard mapping, health profiling and vulnerability mapping.</li> <li>● Develop and implement community driven WASH intervention plan based on situational analysis, risk and needs assessment results, referring to established guidelines and best practices.</li> <li>● Develop safe WASH services nationally in communities through capacity-building, community engagement and workforce support based on regular needs assessments, including: <ul style="list-style-type: none"> <li>▪ Build capacity of communities on WASH concepts, practices and management</li> <li>▪ Provide technical assistance and guidance to communities for planning and designing WASH interventions</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>▪ Facilitate community engagement activities to gather input and ensure active involvement in decision-making processes and implementation</li> <li>▪ Build capacity of local institutions and CBOs to take a lead role in needs assessment, planning and implementing WASH interventions</li> <li>▪ Support communities to develop local guidelines and protocols for WASH interventions based on best practices and current evidence.</li> </ul>
<p><b>04</b> <b>DEMONSTRATED CAPACITY</b></p>	<ul style="list-style-type: none"> <li>● Secure funding and resources necessary for the implementation of community WASH interventions.</li> <li>● Build community capacity in monitoring, feedback and evaluation techniques to assess the effectiveness of WASH services.</li> <li>● Co-design and establish comprehensive monitoring and evaluation systems to track the progress and impact of community WASH interventions.</li> <li>● Continuously improve and adapt WASH interventions based on feedback and evaluation results, emerging knowledge and best practices.</li> <li>● Develop hygiene promotion and awareness campaigns and conduct train the trainers programs for community members to expand campaign reach.</li> <li>● Provide training on community driven WASH to relevant multisectoral staff and key stakeholders in IPC and WASH-FIT assessment of community facilities.</li> <li>● Foster collaboration and knowledge sharing among communities to learn from each other's experiences and successes in WASH interventions.</li> <li>● Conduct review meetings at national and subnational level convening multisectoral key stakeholders to assess implementation progress of community driven WASH, and to identify and document best practices and lessons learned.</li> </ul>
<p><b>05</b> <b>SUSTAINABLE CAPACITY</b></p>	<ul style="list-style-type: none"> <li>● Transfer ownership of community driven WASH interventions to communities for long-term management and maintenance.</li> <li>● Secure local funding mechanisms and partnerships to ensure the financial sustainability of community WASH services.</li> <li>● Co-develop and implement innovative approaches for sustainable management of WASH facilities, such as rainwater harvesting and decentralized wastewater treatment.</li> </ul>

- Strengthen community networks and alliances to advocate for WASH policies and secure ongoing support from government authorities and other stakeholders.
- Integrate M&E of community WASH services as part of overall service delivery and primary health care.
- Document and share country experiences in community-driven WASH and engage the country in peer-to-peer learning programmes at the subnational, national and international levels.

## Tools:

- 10 proposals to build a safer world together – Strengthening the Global Architecture for Health Emergency Preparedness, Response and Resilience Geneva: World Health Organization; 2022 (<https://www.who.int/publications/m/item/10-proposals-to-build-a-safer-world-together---strengthening-the-global-architecture-for-health-emergency-preparedness--response-and-resilience--white-paper-for-consultation--june-2022>).
- Strengthening health emergency prevention, preparedness, response and resilience. Geneva: World Health Organization; 2023 (<https://www.who.int/publications/m/item/strengthening-the-global-architecture-for-health-emergency-prevention--preparedness--response-and-resilience>).
- WHO simulation exercise manual: a practical guide and tool for planning, conducting and evaluating simulation exercises for outbreaks and public health emergency preparedness and response. Geneva: World Health Organization; 2017. (<https://apps.who.int/iris/handle/10665/254741>).
- Guidance for after action review (AAR). Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/311537>).
- Guidance for conducting a country COVID-19 intra-action review. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/333419>)

## Food security, social welfare and protection

Social welfare and protection systems have been developed to achieve equity across all population groups in all circumstances. During health emergencies, communities experience immediate and long-term economic consequences such as loss of jobs, closures of businesses and interruption in education, trade and transportation. Strengthening social protection responses in health emergencies is vital to mitigate such impacts and ensure community resilience. Social protection policies are an integral part of government policies with scaling up, expanding eligibility and ensuring access for vulnerable and at risk populations during health emergencies a priority. Social protection is crucial to making societies better prepared for and more resilient to emergencies. Social protection services can be delivered through insurance, pension or other benefit systems and in-kind services such as food or rent vouchers. Existing programs can be expanded during emergencies, e.g. by broadening eligibility criteria and/or providing additional benefits. In particular, it is imperative to implement public health and social measures (PHSM) in tandem with social protection policies in order to prioritize equity and social justice. This approach ensures that response efforts maximize public health benefits while mitigating the unintended negative consequences of PHSM.

Food security is a right of all people, and it is vital in protecting communities in the context of health emergency preparedness, response and resilience. Enhancing the resilience of food production and distribution systems before, during and after health emergencies needs to be prioritized to further support community resilience and well-being.



### IMPACT:

Social welfare and protection systems expanded to support the well-being and resilience of communities before, during and after emergencies. Food production, procurement and distribution systems are functional before, during and after health emergencies to ensure resilience of food security systems and community well-being.



### MONITORING AND EVALUATION:

(1) Social welfare and protection policies for vulnerable and at risk populations are expanded and scaled up for health emergencies. (2) Resilient infrastructure is developed or expanded to ensure the effective implementation of social protection policies and the delivery of essential goods and services during health emergencies. (3) Policies and procedures are implemented and infrastructure expanded to ensure food security through resilient food production and delivery systems to provide sufficient quantities of food, nutrition and raw materials to meet local demands during health emergencies.



<b>BENCHMARK H2.3: Social welfare and protection systems are expanded and health emergency specific mechanisms are implemented</b> <b>OBJECTIVE: To build on and expand existing social welfare and protection systems, and where needed establish new systems, that effectively support the well-being and resilience of individuals, families and communities before, during and after health emergencies</b>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● Social welfare and protection systems are not expanded for health emergencies or efforts before, during or after health emergencies are ad hoc.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Assess existing social welfare and protection policies within the country to identify level of integration of health emergencies within the existing system(s).</li> <li>● Assess the status of infrastructure logistical networks and organizational frameworks necessary for the seamless provision of social welfare and protection during health emergencies.</li> <li>● Conduct regular risk and vulnerability assessments, alongside assessments of the potential socioeconomic and health impacts from health emergencies, for vulnerable and at risk populations to identify social protection policies for scale up and expansion during health emergencies.</li> <li>● Establish a steering committee with relevant stakeholders to scale up and expand existing social welfare and protection policies, plans and procedures for health emergencies.</li> </ul>
<b>03</b> <b>DEVELOPED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Expand, or update as needed, social protection policies, plans and procedures that address the specific needs of vulnerable and at risk populations in relation to health emergencies.</li> <li>● Establish infrastructure at the national level to support implementation of social protection policies and the and scale up of delivery of goods and services before, during and after health emergencies.</li> <li>● Develop relevant procurement and supply chain systems that enable the timely acquisition and supply of essential resources, goods and services related to social protection throughout all phases of a health emergency.</li> <li>● Explore the opportunities for securing adequate financing to support sustainable social welfare and protection systems.</li> <li>● Conduct targeted capacity-building tailored to the specific training needs of stakeholders responsible for implementing social protection policies, plans and procedures in relation to health emergencies.</li> </ul>



- Implement coordinated efforts between government agencies, NGOs and other stakeholders including the private sector in the delivery of goods and services related to social protection during health emergencies.
- Improve awareness of beneficiaries about the policies and procedures of social welfare and protection that could mitigate impacts of health emergencies.

## 04 DEMONSTRATED CAPACITY

- Scale up social welfare and protection systems for health emergencies at all levels.
- Establish linkage between social welfare and protection systems and emergency response systems, ensuring seamless coordination and integration to address the needs of vulnerable and at risk populations due to health emergencies.
- Establish and maintain resilient infrastructure to support the scale up of social protection policies and the delivery of goods and services before, during and after health emergencies at all levels.
- Strengthen coordination and collaboration among community leaders, CSOs and other stakeholders involved in social welfare and protection initiatives.
- Develop strategic partnerships and collaborations with international organizations and donors for financial and technical support, as needed.
- Establish M&E mechanisms to assess the scale up and implementation of social protection and welfare systems during health emergencies.

## 05 SUSTAINABLE CAPACITY

- Regularly monitor and evaluate the effectiveness of scaling up social welfare and protection policies and procedures for health emergencies and update relevant policies and procedures based on results.
- Sustain the integration of health emergencies into social welfare and protection policies through policy reforms and legislative measures.
- Secure sustainable financing for social welfare and protection systems through establishing a strategic communication channel with key stakeholders involved in domestic resource mobilization.
- Implement technology driven solutions for the efficient delivery and tracking of relevant goods and services to communities.
- Document and share country experiences in the scale up of social welfare and protection during health emergencies and engage the country in peer-to-peer learning programmes at the subnational, national and international levels.
- Sustain capacity-building initiatives, including knowledge generation and information sharing, to continue to strengthen the resilience of social welfare and protection systems.

<b>BENCHMARK H2.4: Resilient food production and distribution systems are functional to ensure food security during health emergencies</b> <b>OBJECTIVE: To enhance and maintain functional food production, procurement and distribution systems that are resilient and effective in ensuring sufficient food supply before, during and after emergencies</b>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● Food production, procurement and distribution systems that are resilient to health emergencies are not in place or efforts are ad hoc.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Conduct a situational analysis of existing food production, procurement and distribution systems including contingency plans for strategic stockpiling to identify gaps and vulnerabilities during health emergencies.</li> <li>● Conduct an assessment of existing infrastructure, technological and logistical networks related to local food production to identify potential gaps.</li> <li>● Review relevant best practices and lessons learned from previous health emergencies related to food production, procurement and distribution systems to identify effective strategies and insights for enhancing resilience.</li> <li>● Explore partnership opportunities with local, national and international suppliers and producers to establish a diverse food supply chain that is reliable during health emergencies.</li> <li>● Designate a national entity or steering committee (with ToR) to be responsible for communication and coordination of the development and implementation of policies, plans and procedures related to food production, procurement and distribution systems before, during and after health emergencies.</li> </ul>
<b>03</b> <b>DEVELOPED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Develop policies, plans and procedures for the production, procurement and distribution of food, nutrition and raw materials during health emergencies.</li> <li>● Develop contingency plans for strategic food stockpiling, including operational guidelines, for health emergencies.</li> <li>● Develop a plan for the establishment of needed infrastructure, technological and logistical networks that enhance the capacity, efficiency and sustainability of local food production during health emergencies.</li> <li>● Establish functional networks among local, national and international suppliers and producers for a reliable and diverse food supply chain before, during after health emergencies.</li> <li>● Train relevant stakeholders on procurement and distribution systems to be implemented during health emergencies, including efficient resource allocation and timely delivery.</li> </ul>

- Enhance the capability of local producers and suppliers to be able to meet increased demand for food, nutrition and raw materials during health emergencies.
- Institutionalize and operationalize the national entity or steering committee for communication, coordination and implementation of food production, procurement and distribution systems during health emergencies.

## 04 DEMONSTRATED CAPACITY

- Implement policies, plans and procedures for the production, procurement and distribution of food, nutrition and raw materials and strategic stockpiling during health emergencies at national and subnational levels.
- Test the effectiveness of the contingency plan for stockpiling through conducting SimEx/AAR/IAR (as relevant).
- Increase the use of technology and innovation to enhance efficiency and sustainability of food production systems and infrastructure relevant to health emergencies.
- Conduct in-country research through collaboration with relevant research institutions to identify emerging trends and challenges and innovative food production, procurement and distribution strategies for health emergencies.
- Secure adequate funding by engaging in strategic communication with domestic and international organizations and donors.
- Establish mechanisms for M&E of the food supply chain to assess the reliable delivery of essential food resources during health emergencies.

## 05 SUSTAINABLE CAPACITY

- Conduct regular M&E of the established systems for producing, procuring and distributing food, nutrition and raw materials before, during and after emergencies. Identify areas for improvement and implement necessary adjustments to policies, plans and procedures, using a data driven approach to support evidence-based decision making.
- Maintain and continuously improve infrastructure, technological and logistical networks for local food production, ensuring long-term sustainability and adaptability to changing needs and challenges due to health emergencies.
- Conduct research to explore underlying causes of vulnerabilities and inequities in food access during health emergencies.
- Sustain financing for food production, procurement and distribution systems with key stakeholders involved in domestic resource mobilization.
- Advocate for policies and regulations (e.g. trade regulation) that promote global sustainable and resilient food production systems, including support for small-scale farmers and local food markets with special reference to health emergencies.

## Tools:

- 10 proposals to build a safer world together – Strengthening the Global Architecture for Health Emergency Preparedness, Response and Resilience Geneva: World Health Organization; 2022 (<https://www.who.int/publications/m/item/10-proposals-to-build-a-safer-world-together---strengthening-the-global-architecture-for-health-emergency-preparedness--response-and-resilience--white-paper-for-consultation--june-2022>).
- Strengthening health emergency prevention, preparedness, response and resilience. Geneva: World Health Organization; 2023 (<https://www.who.int/publications/m/item/strengthening-the-global-architecture-for-health-emergency-prevention--preparedness--response-and-resilience>).
- WHO simulation exercise manual: a practical guide and tool for planning, conducting and evaluating simulation exercises for outbreaks and public health emergency preparedness and response. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254741>).
- Guidance for after action review (AAR). Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/311537>).
- Guidance for conducting a country COVID-19 intra-action review. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/333419>).

## Protection of livelihoods, business continuity and continuity of education and learning

Communities experience significant impacts from health emergencies, including loss of income, interrupted learning and slowed economic productivity. It is critical to safeguard social and economic welfare by taking a social determinants lens to population health and by enhancing existing and special provisions of essential social and education services and assistance during health emergencies.

- Legislation and social systems/services and labour standards: The reinforcement or expansion of legislation for labour, social protection and education along with standards and service coverage aiming to ensure the continuity of basic social and education services and protections during health emergencies helps to mitigate the adverse effects of health emergencies and create a more secure and resilient workforce. This includes: social protection benefits (social assistance, insurance and specific labour and other regulatory mechanisms, such as a moratorium on evictions); care (e.g. pre-school), education and learning (e.g. when educational institutions are closed due to an emergency); encourage employment guarantee in the case of long periods of closures or absences owing to illness; reduce precarious and unsafe work arrangements; ensure labour participation in decision-making; facilitate flexible work options; and foster accountability among governments, businesses, and other organizations.
- Creation, management and allocation of funds and systems: The provision, creation, management and allocation of funds for emergencies as well as how different systems have the capability to perform their usual functions or expand their functions and coverage during emergencies. Social systems that are functioning below 100 percent coverage may need additional finances to expand their reach, in particular to disadvantaged populations. The service and benefits offered may need to be more comprehensive during an emergency or as a result of emergencies. For example, schools that do not have digital platforms may need to be provided with funds to increase access to digital learning. Funding is essential to provide support to affected communities and those at the highest risk of being severely impacted by health emergencies.
- Physical and digital infrastructure: The development of physical and digital infrastructure plays a vital role in ensuring education and business continuity and protecting livelihoods. By providing support and resources, communities can adapt and sustain their economic and daily living activities, as well as social connections, in the face of disruptions caused by health emergencies. Robust physical and digital infrastructure facilitates smooth functioning of education and learning, businesses and promotes the resilience of livelihoods before, during and after emergencies.

It is crucial to promote and safeguard universal, inclusive and equitable quality education and learning opportunities for children and all individuals, regardless of their age or circumstances. This includes: continuity of the development and implementation of relevant curriculum and evaluation tools to ensure uninterrupted delivery of quality education to children, adolescents and adults; establishment of policies and services that provide school-based or school-linked social support including food security, child protection, psychological support and other health services for children, and ensure continuity during emergencies; and digital technologies and infrastructure should aim to support – and not replace – schools, offering inclusive and equitable face-to-face learning as compatible with the emergency supported by a seamless transition between quality hybrid or distance learning modalities.



### **IMPACT:**

The protection of livelihoods and business continuity systems play a significant role in addressing the health, economic and social impacts of health emergencies. All children, adolescents and adults have access to inclusive and effective learning opportunities before, during and after emergencies.



### **MONITORING AND EVALUATION:**

(1) Legislation and social systems/services and labour standards to ensure the continuity of basic social and education services and protections are developed, services and systems are built with specific contingencies for emergencies, and during emergencies legislative and social systems support the provision of services. (2) Contingency funds are channelled through existing systems of support where appropriate (e.g. social protection, schools) or they are created with sustainability in mind to support the affected communities and those are at risk of being severely impacted by health emergencies. (3) Robust physical and digital infrastructure are established for the smooth functioning of businesses, protection of livelihoods and continuity of education and learning. (4) Inclusive and effective learning opportunities are in place for children, adolescents and adults before, during and after emergencies.

<b>BENCHMARK H2.5: The protection of livelihoods, business continuity and continuity of education and learning systems is in place and functional during health emergencies</b>	
<b>OBJECTIVE: To establish and enhance the protection of livelihoods, business continuity, and education and learning continuity systems to help address the economic, education and social impacts of health emergencies</b>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● The protection of livelihoods, business continuity and continuity of education and learning systems is not in place, or efforts are conducted in an ad hoc manner.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Establish a dedicated task force to review current legislation regarding social protection/welfare and education systems for the protection of livelihoods, business continuity and continuity of education and learning.</li> <li>● Collaborate with social protection services, community leaders and CSOs to assess existing legislation and social protection coverage related to livelihoods for various population groups (e.g. formal sector, informal economy, professions, workers in the care economy) and the continuity of business operations.</li> <li>● Collaborate with educational institutions and relevant stakeholders to assess existing education systems' resilience to health emergencies, including remote, hybrid and in-person learning systems during health emergencies and capacity for equitable and seamless transition between modalities.</li> <li>● Collaborate with educational institutions and stakeholders to assess the resilience of school-linked and school-based social protection and healthcare services (e.g. child protection, school meals, psychosocial support, immunization and other healthcare services) including capability for continuity when schools are closed.</li> <li>● Conduct a vulnerability assessment to identify priority groups and develop targeted support systems based on the level of vulnerability.</li> <li>● Identify gaps in physical and digital infrastructure that may affect livelihood protection, business continuity and continuity of education and learning during health emergencies.</li> <li>● Collaborate with relevant stakeholders to raise awareness and advocate for universal health and social protection coverage and the importance of labour standards, safe workplaces and flexible work arrangements.</li> </ul>



## 03 DEVELOPED CAPACITY

- Develop a strategic roadmap for policy and legal frameworks, along with financing modalities, to establish robust systems to effectively protect livelihoods and ensure the seamless continuity of business operations and education activities during health emergencies including targeted support systems for identified priority groups.
- Establish a dedicated fund management system with transparent processes for efficient allocation of resources to support vulnerable populations during emergencies.
- Develop and implement educational policies and programs including remote, hybrid and in-person learning modalities to ensure inclusive, uninterrupted and effective learning opportunities for all individuals during health emergencies.
- Develop guidelines and resources for educators and learners to facilitate remote learning and adapt educational practices to emergency situations.
- Develop and implement policies for alternative modalities to deliver school meals and other school-linked and school-based social protection when schools are closed due to emergencies.
- Develop guidelines and resources for health professionals that deliver school-based or school-linked healthcare services to facilitate telehealth consultations and other modalities to ensure the continuity of services when schools are closed or partially closed due to emergencies.
- Develop and implement necessary reforms in legislation and social systems to ensure formal employment, safe workplaces and facilitation of flexible work arrangements.
- Invest in the development of physical and digital infrastructure to enhance business continuity, livelihood protection and continuity of education and learning.
- Establish a coordination mechanism among relevant stakeholders to exchange best practices and share resources for supporting livelihoods, business continuity, and continuity of education services during health emergencies.

## 04 DEMONSTRATED CAPACITY

- Enhance compliance with legislation, social systems and services, including for social protection and education, and labour standards to provide long-term protection for livelihoods, educational and other social services, employment, and business continuity during health emergencies.
- Develop and implement a regular M&E mechanism to assess relevant legislation and social systems for the protection of livelihoods and business continuity and continuity of education during health emergencies.
- Integrate emergency preparedness and response strategies into national education policies, to sustain continuous and inclusive learning opportunities during health emergencies, as well as continuity of school-based and school-linked social protection and healthcare services.

- Protect the livelihoods of frontline care economy and support service workers before, during and after emergencies (e.g. social workers, teachers, aged care workers, health workers, fire services, etc.).
- Upgrade educational infrastructure and digital networks to meet the changing needs of remote, hybrid and in-person learning considering emerging technologies and educational advancements.
- Maintain and enhance physical and digital infrastructure to adapt to evolving challenges and ensure seamless business operations, and livelihood protection during health emergencies.
- Regularly review and update guidelines, policy and legal frameworks based on M&E results for the protection of livelihood, business continuity and continuity of education during health emergencies.
- Allocate reliable and adequate resources through a self-sustaining funding mechanism for adapting or augmenting finance flows during emergencies to support affected communities and foster resilient livelihoods, business operations and education.
- Implement sustainable infrastructure practices, focusing on renewable energy, digital connectivity and environmentally friendly solutions for long-term livelihood protection, business continuity and education continuity.
- Sustain continued capacity-building for inclusive and equitable approaches for protecting livelihoods, ensuring business continuity and education continuity in health emergencies at regional and global levels.
- Participate in international collaboration and knowledge sharing networks to promote global resilience in protecting livelihoods, ensuring business continuity, and sustaining education during emergencies.

## 05 SUSTAINABLE CAPACITY

### Tools:

- Building back resilient: how can education systems prevent, prepare for and respond to health emergencies and pandemics? United National Educational, Scientific and Cultural Organization; 2021 (<https://unesdoc.unesco.org/ark:/48223/pf00000375278>).
- Strengthening Ministry of Education Engagement and Leadership in Rapid Education in Emergency Response Policy brief. United National Educational, Scientific and Cultural Organization; 2022. (<https://unesdoc.unesco.org/ark:/48223/pf00000383722/PDF/383722eng.pdf.multi>).
- Investing better in universal social protection. Applying international social security standards in social protection policy and financing. International Labour Organization; 2022 ([https://www.ilo.org/global/publications/working-papers/WCMS\\_834216/lang--en/index.htm](https://www.ilo.org/global/publications/working-papers/WCMS_834216/lang--en/index.htm)).
- Social protection responses to the COVID-19 pandemic in developing countries: strengthening resilience by building universal social protection. International Labour Organization; 2020 ([https://labordoc.ilo.org/discovery/fulldisplay/alma995075793502676/41ILO\\_INST:41ILO\\_V1](https://labordoc.ilo.org/discovery/fulldisplay/alma995075793502676/41ILO_INST:41ILO_V1)).

- ILO Standards and COVID-19 (coronavirus). International Labour Organization; 2020 (<https://respect.international/wp-content/uploads/2020/07/ILO-Standards-and-COVID-19-coronavirus.pdf>).
- Place health equity at the heart of the COVID-19 sustainable response and recovery: Building prosperous lives for all in Wales. Public Health Wales NHS Trust; 2021 (<https://phwwhocc.co.uk/wp-content/uploads/2021/07/WHESri-Covid-Report-Eng.pdf>).  
*Example of a social determinants policy context assessment process*
- 10 proposals to build a safer world together – Strengthening the Global Architecture for Health Emergency Preparedness, Response and Resilience Geneva: World Health Organization; 2022 (<https://www.who.int/publications/m/item/10-proposals-to-build-a-safer-world-together---strengthening-the-global-architecture-for-health-emergency-preparedness--response-and-resilience--white-paper-for-consultation--june-2022>).
- Strengthening health emergency prevention, preparedness, response and resilience. Geneva: World Health Organization; 2023 (<https://www.who.int/publications/m/item/strengthening-the-global-architecture-for-health-emergency-prevention--preparedness--response-and-resilience>).
- WHO simulation exercise manual: a practical guide and tool for planning, conducting and evaluating simulation exercises for outbreaks and public health emergency preparedness and response. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254741>).
- Guidance for after action review (AAR). Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/311537>).
- Guidance for conducting a country COVID-19 intra-action review. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/333419>).

## Addressing indirect health and mental health impacts of health emergencies

Communities experience heightened stress, anxiety and fear, and in some cases, increased risk of developing mental health conditions during health emergencies. Estimates indicate that one in five people (22%) living in an area affected by conflict will experience a mental health condition such as depression, anxiety, post-traumatic stress disorder, bipolar disorder or schizophrenia<sup>166</sup>. Meanwhile, countless more experience significant distress and impairment. Disruption of routine health services as well as interventions implemented in response to health emergencies, such as PHSM, can have significant impacts on health and mental health. Addressing indirect health and mental health impacts before, during and after emergencies is crucial.

Proactive measures to tackle these impacts prioritize reducing risks, promoting overall mental health and well-being, fostering resilience and developing effective coping strategies. Safeguarding community health and mental health and psychosocial well-being during emergencies requires a comprehensive approach that includes risk reduction and management, preparedness, readiness, response and building back better after crises. Designing systems for scaling up community health services and mental health and psychosocial support (MHPSS) as a part of health emergency preparedness, and developing and maintaining infrastructure for community health services and MHPSS need to be prioritized to mitigate indirect health and mental health impacts due to emergencies. Designing preparedness systems for scaling up health services and MHPSS includes developing strategies, systems and minimum services that ensure timely access to mental health and psychosocial support<sup>167</sup>, enabling communities to effectively address the indirect health and mental health impacts that arise before, during and after health emergencies. By implementing these mechanisms, decision-makers and stakeholders can establish a resilient approach to emergency preparedness and risk management that prioritizes the community health, mental health and well-being of individuals. Developing and maintaining infrastructure for community health services and MHPSS includes the development and maintenance of physical and digital infrastructure before emergencies occur, specifically for providing community health services and MHPSS.



### IMPACT:

Preparedness efforts to equitably scale up health services and MHPSS have resulted in the creation of a resilient system that significantly reduces the indirect health and mental health impacts during health emergencies.

<sup>166</sup> Charlson F, van Ommeren M, Flaxman A, Cornett J, Whiteford H, Saxena S. New WHO prevalence estimates of mental disorders in conflict settings: a systematic review and meta-analysis. *Lancet*. 2019;394(10194):240–248. doi: 10.1016/S0140-6736(19)30934-1.

<sup>167</sup> The following resource provides a globally agreed package of minimum services to be provided during humanitarian emergencies: Mental Health and Psychosocial Support Services Package. Inter-Agency Standing Committee; 2022. (<https://interagencystandingcommittee.org/iasc-reference-group-mental-health-and-psychosocial-support-emergency-settings/iasc-minimum-service-package-mental-health-and-psychosocial-support>)

**MONITORING AND EVALUATION:**

(1) A strategy for scaling of community health services and MHPSS, as a key part of health emergency preparedness, is developed and implemented. (2) Physical and dynamic digital infrastructure and human resources are developed, strengthened and maintained to support the delivery of community health services and MHPSS.

<b>BENCHMARK H2.6: Strategic scaling of community health services and mental health and psychosocial support (MHPSS) are in place for health emergencies</b>	
<b>OBJECTIVE: To establish a resilient system to mitigate indirect health and mental health effects during health emergencies through preparedness efforts to equitably scale up community health services and MHPSS</b>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● Strategic scaling of community health services and MHPSS is not in place during health emergency preparedness or responses activities, or efforts are ad hoc.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Conduct a situational analysis of community health services and MHPSS for addressing indirect health and mental health impacts of health emergencies.</li> <li>● Conduct a comprehensive needs and risk assessment to identify specific community health service and MHPSS gaps and requirements within the community before, during and after emergencies.</li> <li>● Conduct a review of multisectoral collaboration, including community engagement, for community health services and MHPSS before, during and after emergencies to identify opportunities for further collaboration.</li> <li>● Establish a mechanism for communication and joint development of plans, guidelines and protocols for strategically scaling up community health services and MHPSS between healthcare providers, mental health professionals, community organizations and emergency response agencies.</li> </ul>
<b>03</b> <b>DEVELOPED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Develop relevant plans, guidelines and protocols for the strategic scaling of community health services and MHPSS<sup>168</sup> before, during and after health emergencies, based on existing guidance and incorporating strategies for communication among service providers, resource allocation, equitable distribution of services, workforce training and allocation, and community engagement.</li> <li>● Review and update as needed the physical infrastructure of health facilities to meet the specific needs of community health services and MHPSS during emergencies.</li> <li>● Develop a dynamic digital infrastructure, including telemedicine and digital platforms, to facilitate remote access to health services and MHPSS to support adaptation and continuity of care during emergencies.</li> </ul>

<sup>168</sup> Mental Health and Psychosocial Support Services Package. Inter-Agency Standing Committee; 2022. (<https://interagencystandingcommittee.org/iasc-reference-group-mental-health-and-psychosocial-support-emergency-settings/iasc-minimum-service-package-mental-health-and-psychosocial-support>)



- Develop and implement strategies for community outreach and awareness campaigns to promote mental health, resilience, stress management, positive coping and self-care practices before, during and after emergencies.
- Train health providers and mental health professionals, and educate community leaders, on existing guidance for provision of basic psychosocial support during emergencies.

- Develop and implement capacity-building and training programs for local community members to offer peer support, basic psychosocial support and psychological first aid, and promote mental health in emergency situations.

- Scale up existing services to provide community health services and MHPSS, ensuring equitable access to care for all community members, particularly vulnerable populations.

- Maintain and update a dynamic digital infrastructure, including telemedicine and digital platforms, to facilitate remote access to health services and MHPSS to ensure continuity of care during emergencies.

- Establish a mechanism to monitor and evaluate the implementation of scaling efforts through regular data collection and analysis, including monitoring the reach, effectiveness and quality of community health services and MHPSS before, during and after emergencies

- Conduct SimEx/AAR/IAR (as relevant) to assess the effectiveness approaches to addressing the indirect health and mental health impacts during emergencies.

- Develop and test contingency plans for health services and MHPSS activities, including psychiatric hospitals, outpatient services and community institutions, during emergencies.

- Advocate for the allocation of resources and support for initiatives that address indirect health and mental health impacts of health emergencies.

- Develop and promote deinstitutionalization and comprehensive community-based mental health care and mental health promotion to strengthen resilience during and after emergencies.

- Regularly conduct M&E of scale up and functionality of community health services and MHPSS before, during and after health emergencies and update plans, protocols and guidelines based results and evolving community needs.

- Integrate the scaling efforts for health services and MHPSS into standard practice.

- Allocate sustainable funding to secure human, logistical and technological resources to build sustainable capacity for the continuity of community health services and MHPSS before, during and after emergencies.

## 04 DEMONSTRATED CAPACITY

## 05 SUSTAINABLE CAPACITY



- Enhance the digital infrastructure by implementing advanced telemedicine systems and digital platforms that leverage cutting edge technologies such as machine learning and data analytics to provide comprehensive and integrated health services and MHPSS remotely.
- Document and share best practices for scaling health services and MHPSS before, during and after emergencies and engage the country in peer-to-peer learning programmes at the subnational, national and international levels.

## Tools:

- Mental Health and Psychosocial Support Services Package. Inter-Agency Standing Committee; 2022. (<https://interagencystandingcommittee.org/iasc-reference-group-mental-health-and-psychosocial-support>)
- Charlson F, van Ommeren M, Flaxman A, Cornett J, Whiteford H, Saxena S. New WHO prevalence estimates of mental disorders in conflict settings: a systematic review and meta-analysis. *Lancet*. 2019;394(10194):240-248. doi: 10.1016/S0140-6736(19)30934-1.
- 10 proposals to build a safer world together – Strengthening the Global Architecture for Health Emergency Preparedness, Response and Resilience Geneva: World Health Organization; 2022 (<https://www.who.int/publications/m/item/10-proposals-to-build-a-safer-world-together---strengthening-the-global-architecture-for-health-emergency-preparedness--response-and-resilience--white-paper-for-consultation--june-2022>).
- Strengthening health emergency prevention, preparedness, response and resilience. Geneva: World Health Organization; 2023 (<https://www.who.int/publications/m/item/strengthening-the-global-architecture-for-health-emergency-prevention--preparedness--response-and-resilience>).
- WHO simulation exercise manual: a practical guide and tool for planning, conducting and evaluating simulation exercises for outbreaks and public health emergency preparedness and response. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254741>).
- Guidance for after action review (AAR). Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/311537>).
- Guidance for conducting a country COVID-19 intra-action review. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/333419>).

## Access to countermeasures

### Standardized platforms, regulatory and legal frameworks for clinical trials, product review and development

Standardized platforms for equitable and scalable clinical trials and adapted regulatory and legal frameworks to enable timely trials, product review and approval are essential capabilities to ensure access to crucial countermeasures during health emergencies. Standardized platforms for equitable and scalable clinical trials strengthen outbreak research capacity and streamline trial implementation to address public health threats. This includes: national research capability assessment to guide capacity strengthening; strengthened capacity to conduct research in outbreaks through use of platform trials that enable faster data gathering and increased statistical power of results; global and regional technical and operational support for national trial implementation through training on good clinical practice, and initial set-up and support for essential trial infrastructure; standardized trial designs and core protocols for each pathogen and outbreak; mapping of planned, completed and in-progress clinical trials and latest evidence base relevant to candidate medical countermeasures against priority diseases; and recruitment of patients into trials and sharing of product specific research outcomes through community engagement activities as defined by the Good Participatory Practice (GPP) guidelines.

Additionally, timely access to crucial medical products and efficient regulatory responses during emergencies support access to countermeasures and support rapid responses to health emergencies, including: the use of the global benchmarking tool for the evaluation of national regulatory authority capabilities; implementation of institutional development plans; agile product regulatory requirements and procedures during emergencies; coordination mechanisms between regulators, and between regulators and researchers during emergencies; accelerated countermeasures review and approval through increased regulatory reliance, harmonization and convergence; and participation in expedited emergency use listing and performance qualification processes by WHO to rapidly evaluate and approve critical products for emergencies, as relevant.



#### IMPACT:

Strengthened outbreak research capacity within the country supports rapid, efficient and evidence-based health emergency preparedness and response. Access to crucial medical countermeasures during emergencies is improved for all populations.



### **MONITORING AND EVALUATION:**

- (1) A national strategic plan for clinical trials and outbreak research has been developed and implemented, including platform trials, essential trial infrastructure, pathogen/outbreak standardized trial designs and patient recruitment. (2) Standardized platforms for conducting equitable and scalable clinical trials are established and functional. (3) Regulatory and legal frameworks for timely trials, product review and approval during emergencies are developed and implemented, which provide an efficient regulatory response for timely access to crucial medical products.
- (4) Adapted regulatory and legal frameworks for efficient regulatory response during emergencies are established and functional.

<b>BENCHMARK H4.1: Standardized platforms for conducting equitable and scalable clinical trials are created and functional</b> <b>OBJECTIVE: To establish standardized platforms for conducting equitable and scalable clinical trials, ensuring functionality and effectiveness in outbreak research and ability to support health emergency response efforts</b>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● Standardized platforms for equitable and scalable clinical trials are not in place, or efforts for outbreak research are conducted ad hoc.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Assess national research capacity, including outbreak research capacity, use of platform trials, clinical practice training, essential trial infrastructure, standardized design, clinical trial mapping and patient recruitment practices.</li> <li>● Identify a focal agency for effective coordination and communication of clinical trial activities for outbreak research; to collate research outcomes, such as standardized designs for specific pathogens; and track planned, completed and ongoing clinical trials and latest evidence base relevant to candidate medical countermeasures for priority diseases.</li> <li>● Identify potential, or additional, clinical research sites and establish hospital networks for conducting clinical trials.</li> <li>● Organize advocacy sessions to raise awareness among policy-makers and other relevant authorities, health providers and community members regarding the importance of clinical trials to generate knowledge for the development of medical countermeasures against priority diseases.</li> </ul>
<b>03</b> <b>DEVELOPED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Develop a national strategic plan for clinical trials and outbreak research to strengthen national research capacities and support the development of platform trials, essential trial infrastructure, pathogen/outbreak-standardized trial designs and patient recruitment.</li> <li>● Implement, as relevant, standardized trial designs and protocols for priority pathogens and outbreaks.</li> <li>● Implement platform trials, as relevant, to support outbreak research capacity through faster data gathering and increased statistical power of results.</li> <li>● Develop training modules/packages and conduct training on good clinical practice.</li> <li>● Collaborate with global and regional entities for technical and operational support on national trial set up and essential trial infrastructure.</li> </ul>

	<ul style="list-style-type: none"> <li>● Develop community engagement activities (guided by the Good Participatory Practice guidelines<sup>169</sup>) to support recruitment of patients into clinical trials and facilitate sharing of research outcomes.</li> </ul>
<h2>04</h2> <h3>DEMONSTRATED CAPACITY</h3>	<ul style="list-style-type: none"> <li>● Regularly update mapping of clinical trials and the latest evidence base for candidate countermeasures for priority diseases, to track coverage and facilitate expansion of outbreak research.</li> <li>● Engage communities in the recruitment of patients for clinical trials and sharing of product specific research outcomes.</li> <li>● Identify gaps in research funding and develop and implement mechanisms to secure funding for clinical trials and research collaborations.</li> <li>● Develop and implement mechanisms to enhance the dissemination of clinical trials and outbreak research results to various audiences.</li> <li>● Conduct M&amp;E of clinical trials, including platform and standardized trials, to assess functionality in outbreaks, effectiveness, ethical patient recruitment and relevance of research to priority diseases.</li> <li>● Participate in global mapping efforts of clinical trials to support comprehensive coverage of clinical trials and contribute to the current evidence base relevant to medical countermeasures for priority diseases.</li> <li>● Collaborate and share information among researchers, stakeholders and global/regional entities to maximize evidence-based decision making and application of research evidence.</li> </ul>
<h2>05</h2> <h3>SUSTAINABLE CAPACITY</h3>	<ul style="list-style-type: none"> <li>● Contribute to the development and dissemination of global standards and guidelines for standardized trial designs and core protocols.</li> <li>● Sustain community engagement and participatory approaches in research to ensure transparency, quality, equity and diverse participation in clinical trials and acceptance of research outcomes.</li> <li>● Secure sustainable funding for clinical trials and research collaborations.</li> <li>● Sustain long-term research collaborations and networks with global and regional entities to support equitable and scalable clinical trials.</li> <li>● Regularly contribute to global mapping efforts of clinical trials and current evidence base relevant to medical countermeasures for priority diseases.</li> </ul>

<sup>169</sup> Good Participatory Practice: Guidelines for biomedical HIV prevention trials, second edition. Geneva: Joint United Nations Programme on HIV/AIDS; 2011. (<https://avac.org/resource/report/good-participatory-practice-guidelines-for-biomedical-hiv-prevention-trials-second-edition/>)

<b>BENCHMARK H4.2: Regulatory and legal frameworks are developed and functional for timely trials, product review and approval</b> <b>OBJECTIVE: To develop and implement regulatory and legal frameworks for efficient regulatory response during health emergencies and timely access to crucial medical products</b>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● No regulatory and legal frameworks are available for clinical trials, product review and approval during health emergencies, or existing regulatory efforts are applied ad hoc.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Assess current regulatory and legal frameworks within the country for timely trials, product review and approval during health emergencies. Include current capacities of the regulatory environment, such as regulatory requirements and procedures, coordination between regulators and researchers and accelerated countermeasures review and approval.</li> <li>● Obtain technical assistance from global regulatory entities to develop an institutional development plan based on assessment of capacities.</li> <li>● Establish coordination mechanisms between regulators and researchers within the national context during health emergencies.</li> <li>● Explore opportunities for efficient regulatory response during health emergencies, including pathways for agile product regulatory requirements and accelerated countermeasures review and approval.</li> </ul>
<b>03</b> <b>DEVELOPED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Participate in WHO evaluation of regulatory systems, as mandated by WHA Resolution 67.20, through the WHO Global Benchmarking Tool for evaluation of national regulatory systems<sup>170</sup>.</li> <li>● Develop regulatory and legal frameworks for timely trials, product review and approval during health emergencies which provide timely access to crucial medical products through an efficient regulatory response.</li> <li>● Utilize technical assistance from global regulatory entities to implement institutional development plan.</li> <li>● Enhance coordination mechanisms between regulators and researchers at the national and regional levels to promote effective information sharing and collaboration to address emerging challenges during health emergencies.</li> <li>● Develop and implement mechanisms to support efficient regulatory response during health emergencies, including pathways for agile product regulatory requirements and accelerated countermeasures review and approval.</li> </ul>

<sup>170</sup> WHO Global Benchmarking Tool (GBT) for evaluation of national regulatory systems. World Health Organization. (<https://www.who.int/tools/global-benchmarking-tools>)

## 04 DEMONSTRATED CAPACITY

- Implement regulatory and legal frameworks for timely trials, product review and approval during health emergencies which provide timely access to crucial medical products through an efficient regulatory response.
- Continue participation in the WHO global benchmarking assessment of national regulatory systems, to monitor and evaluate progress in efficiency and quality prior to issuing marketing authorizations and to conduct post-marketing pharmacovigilance.
- Increase regulatory reliance, harmonization and convergence to facilitate accelerated medical countermeasures review and approval during health emergencies.
- Monitor and evaluate coordination mechanisms between regulators and researchers and adapt as needed to support effective collaboration and exchange of information for improved regulatory response during health emergencies.
- Refine and update agile product regulatory requirements and procedures based on lessons learned from previous health emergencies and updated risk assessments for the country.

## 05 SUSTAINABLE CAPACITY

- Establish a comprehensive and sustainable framework for continued evaluation and improvement of national regulatory authority capabilities, utilizing the WHO global benchmarking tool as a regular assessment mechanism.
- Strengthen the country's institutional development plan to ensure long-term sustainability and adaptability, considering emerging regulatory challenges and evolving global regulatory landscapes, and contribute to global technical assistance processes.
- Contribute to shaping global regulatory policies and frameworks, actively participating in international discussions and initiatives to enhance regulatory response and advocating for timely access to critical medical products during health emergencies.
- Participate in WHO emergency use listing<sup>171</sup> and performance qualification processes, as relevant, to support the expediting of vaccines, therapeutics and in vitro diagnostics during health emergencies.

<sup>171</sup> Regulation and prequalification: Emergency use list. World Health Organization. (<https://www.who.int/teams/regulation-prequalification/eul/#~:text=The%20WHO%20Emergency%20Use%20Listing,by%20a%20public%20health%20emergency>)



## Tools:

- Good Participatory Practice: Guidelines for biomedical HIV prevention trials, second edition. Geneva: Joint United Nations Programme on HIV/AIDS; 2017. (<https://avac.org/resource/report/good-participatory-practice-guidelines-for-biomedical-hiv-prevention-trials-second-edition/>)
- Guzman J, O'Connell E, Kikule K, et al. The WHO Global Benchmarking Tool: a game changer for strengthening national regulatory capacity. *BMJ Global Health*. 2020;5:e003181. doi:10.1136/bmjgh-2020-003181.
- WHO Global Benchmarking Tool (GBT) for evaluation of national regulatory systems. World Health Organization. (<https://www.who.int/tools/global-benchmarking-tools>)
- Regulation and prequalification: Emergency use list. World Health Organization. (<https://www.who.int/teams/regulation-prequalification/eul#:~:text=The%20WHO%20Emergency%20Use%20Listing,by%20a%20public%20health%20emergency>.)
- 10 proposals to build a safer world together – Strengthening the Global Architecture for Health Emergency Preparedness, Response and Resilience. Geneva: World Health Organization; 2022 (<https://www.who.int/publications/m/item/10-proposals-to-build-a-safer-world-together---strengthening-the-global-architecture-for-health-emergency-preparedness--response-and-resilience--white-paper-for-consultation--june-2022>).
- Strengthening health emergency prevention, preparedness, response and resilience. Geneva: World Health Organization; 2023 (<https://www.who.int/publications/m/item/strengthening-the-global-architecture-for-health-emergency-prevention--preparedness--response-and-resilience>).
- WHO simulation exercise manual: a practical guide and tool for planning, conducting and evaluating simulation exercises for outbreaks and public health emergency preparedness and response. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254741>).
- Guidance for after action review (AAR). Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/311537>).
- Guidance for conducting a country COVID-19 intra-action review. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/333419>)

## Medical countermeasure manufacturing platforms for health emergencies

Adaptable manufacturing platforms are dynamic systems that possess the capability to be modified and tailored according to specific manufacturing requirements. These platforms are designed with the objective of enhancing regional production capacities of medical countermeasures and catering to the diverse demands that arise from different regions and contexts.

Furthermore, distributed manufacturing that is facilitated by pre-negotiated agreements plays a pivotal role in ensuring the production and equitable distribution of adequate supply of high priority and quality assured medical countermeasures. This process mainly relies on: setting up manufacturing platforms with technology transfer support; agreements for access and benefits sharing priority pathogens; transfer of intellectual property rights through licensing agreements and patent waivers; funding manufacturing facility setup and ongoing operations through at-risk capital financing mechanisms; and national policies for prenegotiated technology transfer, access and benefit sharing, licensing, and financing agreements.

Similarly, an ever-ready capability for rapid mobilization is a critical component of manufacturing to increase capabilities, enhance preparedness and optimize the production of medical countermeasures during emergencies, this includes: dual purpose manufacturing through the integration of emergency capacity into the production of nonemergency products; technical assistance for dual purpose production lines; stable access to production inputs, such as raw materials and utilities; and procurement prioritization from local and regional manufacturers to create demand side incentives.



### IMPACT:

The rapid mobilization of medical countermeasure products is effectively implemented during health emergencies to meet country and regional needs.

### MONITORING AND EVALUATION:



(1) Adaptable manufacturing platforms are created, modified and tailored to meet specific manufacturing requirements, enhancing the overall flexibility and adaptability of the medical countermeasure production processes in-country and regionally. (2) Prenegotiated agreements support the function of adaptable manufacturing platforms. (3) Manufacturing efforts are supported by ever-ready capabilities for rapid mobilization of medical countermeasure production.

<b>BENCHMARK H4.3 Adaptable manufacturing platforms are established and functional, and supported by prenegotiated agreements</b> <b>OBJECTIVE: To develop and implement national manufacturing platforms that support the demands of national and regional production requirements through optimizing capacities and aligning manufacturing efforts with needs as supported by prenegotiated agreements</b>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● Adaptable manufacturing platforms, supported by prenegotiated agreements, are not in place or manufacturing efforts for medical countermeasures are conducted ad hoc.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Establish a multisectoral coordination committee (with ToR) to guide communication and coordination of relevant entities for medical countermeasure manufacturing activities.</li> <li>● Assess the current medical countermeasure manufacturing landscape in the country, including threat and vulnerability mapping, demand forecasting, capability and capacity, and include a regional production needs analysis.</li> <li>● Conduct a situational analysis reviewing the policy environment, input materials, production workforce, financing and technical support for the manufacturing of medical countermeasures within the country.</li> <li>● Engage relevant key stakeholders, including legislative or policy-makers, to develop a national manufacturing plan based on national needs.</li> <li>● Initiate discussions for access to sharing agreements for priority pathogens, as relevant the specific needs and vulnerabilities of the country.</li> </ul>
<b>03</b> <b>DEVELOPED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Implement the national manufacturing plan at the national level.</li> <li>● Develop national policies to support the implementation of prenegotiated technology transfer, access and benefit sharing, licensing and financing agreements.</li> <li>● Conduct a technical feasibility study to identify suitable technologies for regional manufacturing considering the forecasted aggregate regional demands to prioritize how the country can support scale up.</li> <li>● Develop and implement manufacturing platforms with basic technology transfer support, access and benefit sharing agreements for priority pathogen countermeasures and ensure alignment with regional production capacities and requirements.</li> </ul>

- Develop and implement licensing agreements and patent waivers for limited transfer of intellectual property rights to support manufacturers to develop high priority medical countermeasures.
- Establish a capital financing mechanisms for manufacturing facility set up and ongoing operations.

## 04 DEMONSTRATED CAPACITY

- Expand implementation of the national manufacturing plan and national policies to support prenegotiated agreements.
- Expand access and benefit sharing agreements for a wider range of priority pathogens.
- Secure funding for manufacturing facility set up and ongoing operations through more comprehensive at-risk capital financing mechanisms.
- Facilitate the transfer of intellectual property rights through licensing agreements and patent waivers to manufacturers.
- Increase manufacturing platforms and technology transfer to support in-country or regional production of medical countermeasures.
- Conduct M&E of the national manufacturing plan and implementation of national policies, such as through SimEx/AAR/IAR (as relevant).

## 05 SUSTAINABLE CAPACITY

- Regularly review and update the national manufacturing plan and national policies based on M&E findings and the current environment for regional technical support.
- Review regional manufacturing needs and adapt in-country planning, development and implementation of medical countermeasure production accordingly.
- Maintain high quality manufacturing platforms with evolving technological advancements to optimize regional manufacturing requirements.
- Sustain international collaborations for access and benefit sharing, promoting global cooperation and knowledge exchange.
- Contribute to international systems for technology transfer, intellectual property rights through licensing and patent waivers, and access and benefit sharing for priority pathogens.
- Secure sustainable funding mechanisms, including domestic funds and public-private partnerships, to ensure ongoing manufacturing operations.

<b>BENCHMARK H4.4: Manufacturing capabilities are enhanced through ever-ready capabilities for rapid mobilization of medical countermeasure production during health emergencies</b> <b>OBJECTIVE: To establish ever-ready capability for rapid mobilization of medical countermeasure production during health emergencies through dual purpose manufacturing integration and incentivization activities</b>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● An integrated dual purpose manufacturing system to support ever-ready capabilities is not in place or efforts to rapidly mobilize medical countermeasures are conducted ad hoc.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Conduct a comprehensive assessment of existing production lines to identify viable opportunities to integrate emergency capacity into the production of nonemergency products to create dual purpose manufacturing.</li> <li>● Assess available technical assistance for operating dual purpose production lines.</li> <li>● Identify local and regional manufacturers with the capacity to produce medical countermeasures, assessing their readiness for emergency procurement prioritization.</li> <li>● Assess the current availability and reliability of production inputs, such as raw materials and utilities, identifying potential vulnerabilities and areas for improvement to support medical countermeasure production and dual purpose manufacturing.</li> <li>● Review mechanisms in the country to prioritize procurement of medical countermeasures from local and regional manufacturers during health emergencies to create demand side incentives.</li> </ul>
<b>03</b> <b>DEVELOPED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Develop a dual purpose manufacturing plan and supporting procedures/guidelines for the modification of production lines to accommodate dual purpose manufacturing, considering regulatory requirements and industry best practices.</li> <li>● Implement the dual purpose manufacturing plan, integrating emergency capacity into the production of nonemergency products.</li> <li>● Develop strategies to ensure stable access to production inputs, including establishing contingency plans, diversifying suppliers and fostering strategic partnerships.</li> <li>● Develop a procurement prioritization strategy that establishes clear guidelines and criteria for selecting local and regional manufacturers for emergency medical countermeasures.</li> <li>● Establish M&amp;E mechanisms to assess the performance of dual purpose manufacturing systems.</li> </ul>

## 04 DEMONSTRATED CAPACITY

- Implement the procurement prioritization strategy by actively engaging and contracting with selected local and regional manufacturers.
- Implement supply chain management practices for proactive monitoring of production inputs; optimizing inventory management, and conduct regular assessments to ensure uninterrupted access to essential resources including raw material and utilities.
- Conduct regular testing and SimEx (as relevant) to validate the readiness and responsiveness of dual purpose manufacturing for health emergencies.

## 05 SUSTAINABLE CAPACITY

- Update plans, procedures and guidelines based on M&E results.
- Integrate dual purpose manufacturing for preparedness as an integral part of the overall national manufacturing strategy, ensuring sustainability and long-term viability of the approach.
- Sustain and enhance the procurement prioritization strategy including strengthening domestic manufacturing collaboration and capabilities.
- Sustain collaboration and knowledge sharing with industry peers and relevant stakeholders to exchange best practices and promote continued innovations in dual purpose manufacturing.

### Tools:

- 10 proposals to build a safer world together – Strengthening the Global Architecture for Health Emergency Preparedness, Response and Resilience. Geneva: World Health Organization; 2022 (<https://www.who.int/publications/m/item/10-proposals-to-build-a-safer-world-together---strengthening-the-global-architecture-for-health-emergency-preparedness--response-and-resilience--white-paper-for-consultation--june-2022>).
- Strengthening health emergency prevention, preparedness, response and resilience. Geneva: World Health Organization; 2023 (<https://www.who.int/publications/m/item/strengthening-the-global-architecture-for-health-emergency-prevention--preparedness--response-and-resilience>).
- WHO simulation exercise manual: a practical guide and tool for planning, conducting and evaluating simulation exercises for outbreaks and public health emergency preparedness and response. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254741>).
- Guidance for after action review (AAR). Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/311537>).
- Guidance for conducting a country COVID-19 intra-action review. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/333419>)

## Regulatory framework for manufacturing platforms

The implementation of a strengthened regulatory framework to oversee the set-up and scale-up of manufacturing platforms for medical countermeasures is essential to effective health emergency preparedness and response. Recognizing the importance of efficient, reliable, and timely production while adhering to good regulatory practices and upholding stringent regulatory standards, includes capacities in the areas of robust regulatory systems, global and regional technical support, adaptable manufacturing regulatory requirements, emergency coordination mechanisms, accelerated access to medical countermeasures and expedited evaluation and approval process.



### IMPACT:

Local and regional manufacture of medical countermeasures enables equitable access to life-saving interventions before, during and after health emergencies.



### MONITORING AND EVALUATION:

(1) Robust regulatory frameworks are established and operational to effectively oversee the efficient and timely production of medical countermeasures while upholding stringent standards.

<sup>172</sup> These systems provide oversight of licensing and compliance with good practice including good manufacturing practices, good storage and distribution practices, good clinical practices and good pharmacovigilance practices, ensuring adherence to high-quality standards.



<b>BENCHMARK H4.5: National regulatory frameworks for manufacturing platforms are developed and implemented for health emergencies</b> <b>OBJECTIVE: To establish robust national regulatory frameworks that effectively oversee the set-up and scale-up of manufacturing platforms for medical countermeasure products during health emergencies</b>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● National regulatory framework that effectively oversee the set-up and scale-up of manufacturing platforms for medical countermeasure products during health emergencies is not in place or efforts are ad hoc.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Conduct a situational analysis of the existing regulatory framework for manufacturing platforms of medical countermeasures for health emergencies, including: regulatory systems and oversight of licensing of good practice; level of adaptability in regulatory requirements during emergencies; coordination between regulators and manufacturers; level of technical support received from regional and global entities; and ability for accelerated production during health emergencies.</li> <li>● Conduct stakeholder analysis to identify key actors and their roles in the regulatory process and manufacturing for medical countermeasures.</li> <li>● Establish effective communication and coordination mechanisms among stakeholders to streamline regulatory operations before, during and after health emergencies.</li> <li>● Obtain technical guidance from global and regional entities to support national regulatory system strengthening.</li> <li>● Explore opportunities for the accelerated production of medical countermeasures and how regulatory reliance, harmonization and convergence can be increased during health emergencies.</li> </ul>
<b>03</b> <b>DEVELOPED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Develop comprehensive regulatory framework and strategies/guidelines to set-up and scale-up manufacturing platforms for medical countermeasure products during health emergencies.</li> <li>● Develop legal frameworks and procedures that align with international standards and best practices for manufacturing medical countermeasures.</li> <li>● Develop M&amp;E mechanisms to assess manufacturing regulatory systems.</li> <li>● Conduct capacity-building initiatives for relevant authorities to enhance capabilities in overseeing and regulating manufacturing platforms.</li> </ul>

## 04 DEMONSTRATED CAPACITY

- Implement national regulatory framework and strategies, ensuring adherence to legal frameworks and procedures, to set-up and scale-up manufacturing platforms for medical countermeasure products during health emergencies.
- Assess the use of WHO emergency use authorization (EUA), emergency use listing (EUL) and licensing, as relevant to the country.
- Conduct regular M&E of the regulatory system for manufacturing platforms, including adaptability of requirements during health emergencies.
- Demonstrate coordination mechanism between regulators and manufacturers for manufacture and access to medical countermeasures during health emergencies.
- Establish regulatory oversight of Good Manufacturing Practice compliance.

## 05 SUSTAINABLE CAPACITY

- Adjust and update the regulatory systems based on M&E results.
- Secure long-term funding to sustain and support the regulatory oversight activities for medical countermeasure manufacturing platforms before, during and after health emergencies.
- Contribute to global regulatory technical support and offer guidance to other countries on national regulatory system strengthening.
- Engage in knowledge sharing and collaboration with other regions to enhance regulatory practices and standards.

### Tools:

- 10 proposals to build a safer world together – Strengthening the Global Architecture for Health Emergency Preparedness, Response and Resilience. Geneva: World Health Organization; 2022 (<https://www.who.int/publications/m/item/10-proposals-to-build-a-safer-world-together---strengthening-the-global-architecture-for-health-emergency-preparedness--response-and-resilience--white-paper-for-consultation--june-2022>).
- Strengthening health emergency prevention, preparedness, response and resilience. Geneva: World Health Organization; 2023 (<https://www.who.int/publications/m/item/strengthening-the-global-architecture-for-health-emergency-prevention--preparedness--response-and-resilience>).
- WHO simulation exercise manual: a practical guide and tool for planning, conducting and evaluating simulation exercises for outbreaks and public health emergency preparedness and response. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254741>).
- Guidance for after action review (AAR). Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/311537>).
- Guidance for conducting a country COVID-19 intra-action review. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/333419>).

## Coordinated demand aggregation for medical countermeasures

Coordinated demand aggregation is crucial in the efforts of building an agile and effective health emergency supply chain, and is essential for decision-makers to anticipate and meet demand of medical countermeasures for emergency preparedness and response. This includes performing risk-based demand analysis, demand forecasting, aggregating demand forecasts across countries and regions, and formulating robust methodologies for demand forecasting.



### IMPACT:

Decision-makers are able to effectively anticipate and meet demand for medical countermeasures during health emergencies.



### MONITORING AND EVALUATION:

(1) Robust methods are developed and applied for forecasting demands and well aggregated to ensure accurate and equitable distribution of medical counter measures and inform decision-making for procurement and distribution. (2) Risk-based analyses and rapid needs assessments are applied to quantify medical countermeasures for initial supply push at the onset of a health emergency response.

<b>BENCHMARK H4.6: Coordinated demand aggregation systems are established and operational</b> <b>OBJECTIVE: To establish and operationalize coordinated demand aggregation systems that effectively anticipate and meet the demands for medical countermeasures during health emergencies</b>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● Coordinated demand aggregation systems that meet the needs for medication countermeasures during health emergencies are not in place, or efforts are ad hoc.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Conduct a situational analysis to identify gaps and challenges in existing demand analysis and forecasting capabilities for medical countermeasures during health emergencies.</li> <li>● Conduct a stakeholder analysis to identify key actors involved in the demand aggregation process, and establish effective communication and coordination mechanisms.</li> <li>● Develop a mechanism to perform risk-based demand analysis, including rapid risk-assessment of needs at the onset and during a health emergency.</li> </ul>
<b>03</b> <b>DEVELOPED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Conduct a risk-based demand analysis, including rapid risk-assessment of needs at the onset and during a health emergency.</li> <li>● Develop and implement tools and methodologies to conduct rapid assessments using data-driven approaches to facilitate accurate and timely demand forecasts for medical countermeasures during health emergencies.</li> <li>● Establish data integrity and privacy policies to support data-driven approaches to demand forecasting and aggregation, including vulnerable populations.</li> <li>● Develop a mechanism to share demand forecasts across countries and region, including vulnerable populations.</li> <li>● Implement capacity-building programs to enhance the capabilities of stakeholders in collecting, analyzing and effectively forecasting demand.</li> </ul>
<b>04</b> <b>DEMONSTRATED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Develop and integrate advanced tools and methodologies, such as statistical modelling and scenario analysis, to facilitate accurate and timely demand forecasts for medical countermeasures during health emergencies.</li> <li>● Develop and implement a M&amp;E framework to assess mechanisms to effectively determine demand aggregation and forecasting for medical countermeasures for health emergencies.</li> <li>● Implement mechanism to share demand forecasts across countries and region, including vulnerable populations.</li> </ul>

## 05 SUSTAINABLE CAPACITY

- Update tools and methodologies used for demand forecasting based on M&E results.
- Secure long-term funding and resource allocation to sustain demand aggregation and forecasting practices.
- Document and share country experiences in demand aggregation and forecasting and engage the country in peer-to-peer learning programmes at the subnational, national and international levels.
- Conduct research and analysis to identify new tools and methods to further enhance the accuracy and effectiveness of risk-based demand analysis and demand forecasting.

### Tools:

- 10 proposals to build a safer world together – Strengthening the Global Architecture for Health Emergency Preparedness, Response and Resilience. Geneva: World Health Organization; 2022 (<https://www.who.int/publications/m/item/10-proposals-to-build-a-safer-world-together---strengthening-the-global-architecture-for-health-emergency-preparedness--response-and-resilience--white-paper-for-consultation--june-2022>).
- Strengthening health emergency prevention, preparedness, response and resilience. Geneva: World Health Organization; 2023 (<https://www.who.int/publications/m/item/strengthening-the-global-architecture-for-health-emergency-prevention--preparedness--response-and-resilience>).
- WHO simulation exercise manual: a practical guide and tool for planning, conducting and evaluating simulation exercises for outbreaks and public health emergency preparedness and response. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254741>).
- Guidance for after action review (AAR). Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/311537>).
- Guidance for conducting a country COVID-19 intra-action review. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/333419>).

## Equitable and transparent needs-based allocation of medical countermeasures

The fair, equitable and efficient distribution of medical countermeasures during emergencies is central to global health security and involves: needs-based allocation frameworks and principles that can be rapidly adapted; a global allocation process that manages conflicts of interest and ensures that allocation decisions are transparent, driven by public health goals and based on an ethical framework; allocation decisions take account of commitment to use medical countermeasures appropriately according to established guidance; and allocations are timely, efficient, transparent and underpinned by collective agreements, international instruments and political commitment to equitable access to appropriate medical countermeasures during health emergencies.



### IMPACT:

Fair, equitable and efficient distribution of medical countermeasures during health emergencies.



### MONITORING AND EVALUATION:

(1) Needs-based allocation frameworks and principles are developed and implemented to guide the transparent allocation of medical countermeasures during health emergencies.

<b>BENCHMARK H4.7: Equitable and transparent needs-based allocation frameworks are in place for medical countermeasures during health emergencies</b> <b>OBJECTIVE: To establish and implement needs-based allocation frameworks and principles for the fair, equitable and efficient distribution of medical countermeasures during health emergencies</b>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● Needs-based allocation frameworks for distribution of medical countermeasures are not in place or efforts are ad hoc during health emergencies.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Conduct a situational analysis of resource allocation frameworks or mechanisms and principles for equitable access to medical countermeasures before, during and after emergencies.</li> <li>● Review collective agreements and international instruments that support equitable access to appropriate countermeasures.</li> <li>● Conduct a stakeholder analysis and mapping to identify key actors involved in the allocation process, and provide guidance to relevant stakeholders.</li> </ul>
<b>03</b> <b>DEVELOPED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Develop and implement needs-based allocation frameworks and principles to optimize equitable, effective and responsive distribution of medical countermeasures during health emergencies.</li> <li>● Contribute to the development of collective agreements and international instruments that support and promote equitable access to appropriate countermeasures.</li> <li>● Develop training and capacity-building initiatives for stakeholders involved in the distribution of medical countermeasures, including needs-based, equitable, transparent and efficient allocation principles.</li> <li>● Establish mechanisms for M&amp;E of needs-based allocation frameworks and decisions, considering transparency and responsibility.</li> </ul>
<b>04</b> <b>DEMONSTRATED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Expand implementation of the needs-based allocation frameworks and principles to all levels to optimize medical countermeasure distribution during health emergencies.</li> <li>● Actively participate and contribute to the global allocation process, conflict management, transparency and collaboration in resource allocation.</li> <li>● Conduct capacity-building initiatives for stakeholders involved in the distribution of medical countermeasures, including needs-based, equitable, transparent and efficient allocation principles.</li> </ul>



	<ul style="list-style-type: none"> <li>● Enhance compliance with collective agreements and international instruments for medical countermeasure allocation by conducting regular in-country audits, publishing allocation processes and outcomes, and implementing robust governance mechanisms for transparency.</li> <li>● Conduct regular M&amp;E of need based allocation frameworks and decisions, considering transparency and responsibility.</li> </ul>
<h2>05 SUSTAINABLE CAPACITY</h2>	<ul style="list-style-type: none"> <li>● Update frameworks and principles based on M&amp;E results.</li> <li>● Sustain needs-based allocation frameworks and principles within subnational and national emergency response systems, ensuring integration into policies, legislation and SOPs.</li> <li>● Secure sustainable funding to optimize needs-based allocation frameworks and systems at all levels for health emergencies.</li> <li>● Advocate for fair global allocation processes by actively contributing to the development of international standards, guidelines and frameworks, ensuring that allocation decisions are driven by public health goals and ethical considerations.</li> </ul>

### Tools:

- 10 proposals to build a safer world together – Strengthening the Global Architecture for Health Emergency Preparedness, Response and Resilience. Geneva: World Health Organization; 2022 (<https://www.who.int/publications/m/item/10-proposals-to-build-a-safer-world-together---strengthening-the-global-architecture-for-health-emergency-preparedness--response-and-resilience--white-paper-for-consultation--june-2022>).
- Strengthening health emergency prevention, preparedness, response and resilience. Geneva: World Health Organization; 2023 (<https://www.who.int/publications/m/item/strengthening-the-global-architecture-for-health-emergency-prevention--preparedness--response-and-resilience>).
- WHO simulation exercise manual: a practical guide and tool for planning, conducting and evaluating simulation exercises for outbreaks and public health emergency preparedness and response. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254741>).
- Guidance for after action review (AAR). Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/311537>).
- Guidance for conducting a country COVID-19 intra-action review. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/333419>)

## Emergency coordination

### Operational support and logistics platforms

Robust operational support and logistics systems enable the transformation of strategies into practical actions. The achievement of tangible outcomes can be attained through:

- Staff safety and security: Ensuring the protection of both personnel and affected communities involved in emergency response efforts. Staff safety and security mainly includes suitable accommodation and provisions, equipment for safety and communications, adequate working environment, and provision of safe transport. Safety and security also safeguards against threats such as sexual exploitation, abuse, and harassment, with a strong emphasis on upholding the welfare of all individuals engaged in the emergency coordination and response process.
- Operational logistics: Medical and supply logistics involve the establishment and maintenance of vital infrastructure and processes that are indispensable for effective coordination during emergencies.
- Operational support and management: A range of essential functions necessary for streamlined emergency coordination such as financial administration, efficient allocation and utilization of resources, and effective management of human resources within the context of emergency response operations.



#### IMPACT:

Emergency coordination strategies are informed and supported by well established operational support and logistics platforms.



#### MONITORING AND EVALUATION:

(1) Systems for staff safety and security are established and operational for health emergencies. (2) Operational logistics platforms for medical and supply logistics are well coordinated before, during and after health emergencies. (3) Systems for operational support and management are established and operational within the context of emergency response operations.

<b>BENCHMARK H5.1: Operational support and logistics platforms are established and functional for health emergencies</b> <b>OBJECTIVE: To establish and maintain functional operational support and logistics platforms for effective emergency coordination including staff safety and security, operational logistics and efficient operational support and management</b>	
<b>CAPACITY LEVEL</b>	<b>BENCHMARK ACTIONS</b>
<b>01</b> <b>NO CAPACITY</b>	<ul style="list-style-type: none"> <li>● Operational support and logistics platforms are not in place or are functional on an ad hoc basis during health emergencies.</li> </ul>
<b>02</b> <b>LIMITED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Conduct a situational analysis of existing capabilities for emergency coordination, including staff safety and security, operational logistics and operational support and management, to identify strengths and gaps.</li> <li>● Conduct a review, as appropriate, to gather insights from previous health emergencies regarding staff safety and security, operational logistics, and operational support and management aspects.</li> <li>● Perform a stakeholder analysis to identify key actors involved in providing operational support and logistic platforms for health emergencies.</li> <li>● Designate a focal point or entity responsible to oversee and coordinate operational support and logistics required before, during and after health emergencies.</li> </ul>
<b>03</b> <b>DEVELOPED CAPACITY</b>	<ul style="list-style-type: none"> <li>● Develop a safety and security framework and protocols to ensure the protection of staff and communities they serve during emergency response efforts.</li> <li>● Develop an integrated operational support and logistics plan that encompasses basic financial administration procedures, clear guidelines for human resources management, contingency measures and enhanced coordination with accommodation providers, transportation agencies and suppliers.</li> <li>● Establish dedicated logistics coordination teams to manage accommodation facilities, health emergency logistics and procurement, ensuring essential resources and supplies are available during emergencies.</li> <li>● Enhance the capacity for safety and security of personnel engaged in emergency coordination through targeted training programs, workshops and establishing reporting mechanisms and collaboration with law enforcement agencies.</li> <li>● Establish codes of conduct and ethics policies for staff involved in emergency response efforts.</li> </ul>

## 04 DEMONSTRATED CAPACITY

- Implement the safety and security framework and protocols at national and subnational levels.
- Implement the integrated operational support and logistics plan for effective coordination, resource management and response during health emergencies at national and subnational levels.
- Establish effective linkages between medical logistic and supply departments and PHEOCs to strengthen operational logistic capacities and implement technology solutions.
- Enhance operational support and management by implementing relevant financial forecasting and risk management systems, innovative resource allocation approaches and continuous capacity-building programs for relevant multisectoral staff.
- Regularly monitor and evaluate and refine operational systems and processes based on performance metrics and feedback.

## 05 SUSTAINABLE CAPACITY

- Sustain strategic stockpiles of essential resources and supplies, leverage advanced technology solutions and establish long-term partnerships for optimized operational logistics.
- Secure and sustain funding for staff safety, security, operational logistics and support, and management systems.
- Regularly assess and improve financial and operational systems through regular M&E, audits and participation in knowledge-sharing initiatives.
- Share country experience in operational support and logistics platforms and engage the country in peer-to-peer learning programmes at the subnational, national and international levels.

### Tools:

- 10 proposals to build a safer world together – Strengthening the Global Architecture for Health Emergency Preparedness, Response and Resilience. Geneva: World Health Organization; 2022 (<https://www.who.int/publications/m/item/10-proposals-to-build-a-safer-world-together---strengthening-the-global-architecture-for-health-emergency-preparedness--response-and-resilience--june-2022>).
- Strengthening health emergency prevention, preparedness, response and resilience. Geneva: World Health Organization; 2023 (<https://www.who.int/publications/m/item/strengthening-the-global-architecture-for-health-emergency-prevention--preparedness--response-and-resilience>).
- WHO simulation exercise manual: a practical guide and tool for planning, conducting and evaluating simulation exercises for outbreaks and public health emergency preparedness and response. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254741>).
- Guidance for after action review (AAR). Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/311537>).
- Guidance for conducting a country COVID-19 intra-action review. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/333419>).

# Annex 1: Glossary

**Note:** *These terms and definitions have been provided for use within the context of this tool and may differ from those used in other documents.*

**After action review.** An AAR provides an opportunity to review the functional capacity of public health and emergency response systems and to identify practical areas for continued improvement (Guidance for after action review (AAR). Geneva, Switzerland: World Health Organization; 2019 (WHO/WHE/CPI/2019.4). Licence: CC BY-NC-SA 3.0 IGO.)

**Biological agents of high consequence.** These are biological agents and toxins that have the potential to pose a severe threat to both human and animal health. While some select agents are normally found in the environment and don't cause human disease, many of them – if manipulated or released in large quantities – can cause serious health threats. The informal Australia Group provides a List of human and animal pathogens and toxins for export control ([http://www.australiagroup.net/en/human\\_animal\\_pathogens.html](http://www.australiagroup.net/en/human_animal_pathogens.html))

**Biosafety.** Laboratory biosafety describes the containment principles, technologies and practices that are implemented to prevent unintentional exposure to pathogens and toxins, or their accidental release. (World Health Organization. (2020). Laboratory biosafety manual, 4th ed. World Health Organization. <https://iris.who.int/handle/10665/337956>. License: CC BY-NC-SA 3.0 IGO)

**Biosecurity.** Laboratory biosecurity describes the protection, control and accountability for valuable biological materials within laboratories as well as information related to these materials and dual-use research, in order to prevent their unauthorized access, loss, theft, misuse, diversion or intentional release. (World Health Organization. (2022). Joint external evaluation tool: International Health Regulations (2005), 3rd ed. World Health Organization. <https://apps.who.int/iris/handle/10665/357087>. License: CC BY-NC-SA 3.0 IGO)

**Case.** A person who has the particular disease, health disorder or condition that meets the case definitions for surveillance and outbreak investigation purposes. The definition of a case for surveillance and outbreak investigation purpose is not necessarily the same as an ordinary clinical definition. (adapted from Porta M, editor. A dictionary of epidemiology, sixth edition. International Epidemiological Association, Inc. New York: Oxford University Press; 2014).

**Case definition.** A set of diagnostic criteria that must be fulfilled for an individual to be regarded as a case of a particular disease for surveillance and outbreak investigation purposes. Case definitions can be based on clinical criteria, laboratory criteria or a combination of the two with the elements of time, place and person. (In the IHR, case definitions are published on the WHO website<sup>1</sup> for the four diseases for which all cases must be notified by States Parties to WHO, regardless of circumstances, under the IHR as provided in Annex 2.)

**Chemical event.** A manifestation of a disease or an occurrence of an event which creates a potential for a disease as a result of exposure to or contamination by a chemical agent.

**Communicable disease.** A disease whose causal agent can be transmitted from successive hosts to healthy subjects, from one individual to another. An illness due to a specific infectious agent or its toxic products that arises through transmission of such agent or products from an infected person, animal, or reservoir to a susceptible host, either directly or indirectly through an intermediate plant or animal host, vector, or the inanimate environment. All infections and infestations are communicable (transmissible) diseases. (adapted from Porta M, editor. A dictionary of epidemiology, sixth edition. International Epidemiological Association, Inc. New York: Oxford University Press; 2014).

**Competent authority.** An authority responsible for the implementation and application of health measures under the IHR.

**Contamination.** The presence of an infectious or toxic agent or matter on the body surface of a human or animal, in or on a product prepared for consumption or on other inanimate objects, including conveyances that may constitute a public health risk.

**Decontamination.** A procedure whereby health measures are taken to eliminate an infectious or toxic agent or matter on the body surface of a human or animal, in or on a product prepared for consumption, or on other inanimate objects, including conveyances that may constitute a public health risk.

**Designated laboratories.** These are laboratories designated to perform specific laboratory services by national, WHO or other authorities because of their proven capacities and capabilities, such as for AMR testing.

**Designated points of entry.** These refer to a port, airport and potentially a ground crossing that is designated by a State Party to strengthen, develop and maintain the capacities as per main IHR articles 19, 20 and 21, and as described in Annex 1 of the IHR: the capacities at all times concerning access to medical services for prompt assessment and care of ill travellers, a safe environment for travellers (e.g. water, food, waste), personnel for inspection and vector control functions; and the capacities to respond specifically to events that may constitute a public health emergency of international concern.

**Disease.** An illness or medical condition, irrespective of origin or source, that presents or could present significant harm to humans.

**Disinsection.** The procedure whereby health measures are taken to control or kill insect vectors of human diseases present in baggage, cargo, containers, conveyances, goods and postal parcels.

**Early warning alert and response.** The organized mechanism to rapidly detect and respond to signals that might indicate potential acute public health events (Early Warning Alert and Response in Emergencies: an operational guide. Geneva: World Health Organization; 2022. Licence: CC BY-NC-SA 3.0 IGO).

**Early Warning System.** In disease surveillance, a specific procedure to detect as early as possible any departure from usual or normally observed frequency of phenomena. (Porta M, editor. A dictionary of epidemiology, sixth edition. International Epidemiological Association, Inc. New York: Oxford University Press; 2014)

**Epidemic.** The occurrence in a community or region of cases of an illness, specific health-related behaviours, or other health-related events clearly in excess of normal expectancy. The community or region and the period in which the cases occur are specified precisely. The number of cases indicating the presence of an epidemic varies according to the agent, size and type of population exposed, previous experience or lack of



exposure to the disease, and time and place of occurrence (adapted from Porta M, editor. A dictionary of epidemiology, sixth edition. International Epidemiological Association, Inc. New York: Oxford University Press; 2014).

**Event.** A manifestation of disease or an occurrence that creates a potential for disease.

**Event-based surveillance.** The organized collection, monitoring, assessment and interpretation of mainly unstructured ad hoc information regarding potential public health events or risks which may represent an acute risk to human health. (Early Warning Alert and Response in Emergencies: an operational guide. Geneva: World Health Organization; 2022. Licence: CC BY-NC-SA 3.0 IGO).

### **Field Epidemiology Training Program.**

- FETP Basic Level Training is for local health staff and consists of limited classroom hours interspersed throughout as a three-to-five month on-the-job field assignment to build capacity in conducting timely outbreak detection, public health response and public health surveillance.
- FETP Intermediate Level Training is for district/region/state-level epidemiologists, and consists of limited classroom hours interspersed throughout as a six-to-nine month on-the-job mentored field assignment to build capacity in conducting outbreak investigations, planned epidemiologic studies, and public health surveillance analyses and evaluations.
- FETP Advanced Level Training is for advanced epidemiologists and consists of limited classroom hours interspersed throughout the 24 months of mentored field assignments to build capacity in outbreak investigations, planned epidemiologic studies, public health surveillance analyses and evaluations, scientific communication, and evidence-based decision making for development of effective public health programming with a national focus. Animal health professionals can be engaged in these FETP trainings.

**Gender.** refers to socially constructed characteristics of women and men – such as norms, roles and relations of and between groups of women and men. (World Health Organization. (2011). Gender mainstreaming for health managers: a practical approach. World Health Organization. <https://apps.who.int/iris/handle/10665/44516>)

**Gender action plan.** Refers to a planning document that includes: (i) Activity(ies) that will be undertaken to address identified and assessed gender gap(s) (ii) Indicators to assess progress in closing each gender gap; (iii) Data and measures required to track shifts in each indicator; (iv) Training and (human and institutional) capacity requirements and how these will be met; (v) An estimated line-item budget; (vi) A timeline.

**Gender gaps.** refers to differences between men, women and people of diverse gender identities in terms of their levels of participation, access, rights, remuneration or benefits. These gaps may arise because of biological, socioeconomic or sociocultural reasons. Gender high priority gaps refers to sex and gender gaps that are assessed to (i) inhibit implementation effectiveness, (ii) potentially affect a large proportion of the population of the disadvantaged sex (women and girls, or men and boys) and (iii) act as a constraint to effective and full preparedness and response that the whole population can access. Based on the gender analysis conducted, each country will determine which elements of gender inequalities are high priority, with consideration given to the differences across countries in sociocultural contexts and gender norms



**Gender systematic assessment.** refers to evidence-based identification of a gender gap to understand the causes of that gender gap (sometimes referred to as gender analysis), without knowing the causes of a gender inequality it is not possible to develop an action plan to address it. Assessments can be done using secondary analysis of available data and research where possible, as well as with novel research.

**Ground crossing.** A point of land entry into a State Party, including those utilized by road vehicles and trains.

**Hazard.** The inherent capability of an agent or situation to have an adverse effect; a factor or exposure that may adversely affect health (similar concept to risk factor).

**Health worker.** Any employee in a healthcare facility who has close contact with patients, patient-care areas or patient-care items; also referred to as “health care worker, health worker, or health and care worker”.

**Public health and social measures (PHSMs).** Are a key strategies to reduce the transmission of pathogens with epidemic or pandemic potential. PHSMs include non-pharmaceutical interventions that can be taken by individuals, institutions, communities, local and national governments and international bodies to slow or stop the spread of an infectious disease. (<https://www.who.int/activities/measuring-the-effectiveness-and-impact-of-public-health-and-social-measures>)

**Incidence.** The number of instances of illness commencing, or of persons falling ill, during a given period in a specified population (Porta M, editor. A dictionary of epidemiology, sixth edition. International Epidemiological Association, Inc. New York: Oxford University Press; 2014).

**Indicator-based surveillance.** The systematic collection, monitoring, analysis and interpretation of structured health-related data (indicators), produced by health facilities or other defined sources.

Reporting is based on standardized case definitions of selected priority diseases or conditions. (Early Warning Alert and Response in Emergencies: an operational guide. Geneva: World Health Organization; 2022. Licence: CC BY-NC-SA 3.0 IGO).

**Infection.** The entry and development or multiplication of an infectious agent in an organism, including the body of humans and animals that may constitute a public health risk. Infection is non synonymous with infectious disease; the result may be inapparent or manifest. (adapted from Porta M, editor. A dictionary of epidemiology, sixth edition. International Epidemiological Association, Inc. New York: Oxford University Press; 2014).

**Infectious agent.** A microscopic element that is capable or causing a disease in a susceptible host. (Porta M, editor. A dictionary of epidemiology, sixth edition. International Epidemiological Association, Inc. New York: Oxford University Press; 2014).

**Infectious disease.** A disease due to an infectious agent. While some infectious diseases are contagious, others are noncontagious (i.e. require a vector for transmission). All infectious and infestations are communicable diseases (See also Communicable diseases) (adapted from Porta M, editor. A dictionary of epidemiology, sixth edition. International Epidemiological Association, Inc. New York: Oxford University Press; 2014).

**International Health Regulations (2005) (IHR).** This is a legally-binding instrument of international law which has its origin in the International Sanitary Conventions of 1851, concluded in response to increasing concern about the links between international trade and spread of diseases (cross-border health risks).

**Intra-action review.** a country-led, facilitated discussion that allows national and subnational stakeholders of the COVID-19 response to (i) reflect on actions being undertaken to prepare for and respond to the COVID-19 outbreak at the country level in order to identify current best practices, gaps and lessons learned, and (ii) propose corrective actions to improve and strengthen the continued response to COVID-19. Additionally, IAR findings and recommendations may contribute to improving the management of concurrent emergencies and to long-term health security. (Guidance for conducting a country COVID-19 intra-action review (IAR). Geneva: World Health Organization; 2020 (WHO/2019-nCoV/Country\_IAR//2020.1). Licence: CC BY-NC-SA 3.0 IGO.)

**Isolation.** Separation, for the period of communicability, of infected persons or animals from others under such conditions as to prevent or limit the transmission of the infectious agent from those infected to those who are susceptible or who may spread the agent to others. (Porta M, editor. A dictionary of epidemiology, sixth edition. International Epidemiological Association, Inc. New York: Oxford University Press; 2014).

**Legislation.** The range of legal, administrative or other governmental instruments that may be available for States Parties to implement the IHR. This includes legally binding instruments, such as state constitutions, laws, acts, decrees, orders, regulations and ordinances; legally non-binding instruments, such as guidelines, standards, operating rules, administrative procedures or rules; and other types of instruments, such as protocols, resolutions and inter-sectoral or inter-ministerial agreements. This encompasses legislation in all sectors, such as health, agriculture, transportation, environment, ports and airports, and at all applicable governmental levels (national, intermediate, local and other).

**Multisectoral.** A holistic approach involving the efforts of multiple organizations, institutes and agencies. It encourages interdisciplinary participation, collaboration and coordination of people of concern and resources from these key organizations for promoting health security, to achieve a specific goal.

**National legislation.** see **Legislation.**

**National IHR Focal Point.** The national centre designated by each State Party, which shall be accessible at all times for communications with WHO IHR contact points under the IHR.

**Notifiable disease.** A disease that, by statutory/legal requirements, must be reported to a public health or other competent authority in the pertinent jurisdiction when the diagnosis is made (adapted from Porta M, editor. A dictionary of epidemiology, sixth edition. International Epidemiological Association, Inc. New York: Oxford University Press; 2014).

**Notification.** The processes by which cases or outbreaks are brought to the knowledge of the health authorities. In the context of the IHR, notification is the official communication of a disease/health event to WHO by the health administration of the Member State affected by the disease/health event.

**One Health.** Defined by WHO as an approach to designing and implementing programmes, policies, legislation and research in which multiple sectors communicate and work together to achieve better public health outcomes. In the context of the WHO IHR monitoring and evaluation framework, taking a One Health approach means including, from all relevant sectors, national information, expertise, perspectives and experience necessary to conduct assessments, evaluations and reporting for the implementation of the IHR.

**Other governmental instruments.** Agreements, protocols and resolutions of any government authority or body.

**Outbreak.** An epidemic limited to localized increase in the incidence of a disease, such as in a village, town or closed institution (adapted from Porta M, editor. A dictionary of epidemiology, sixth edition. International Epidemiological Association, Inc. New York: Oxford University Press; 2014).

**Point of entry.** A passage for international entry or exit of travellers, baggage, cargo, containers, conveyances, goods and postal parcels, and the agencies and areas providing services to them upon entry or exit.

**Port.** A seaport or a port on an inland body of water where ships on an international voyage arrive or depart.

**Public health emergency of international concern (PHEIC).** An extraordinary event (as provided in the IHR) that: (i) constitutes a public health risk to other states through the international spread of disease; and (ii) potentially requires a coordinated international response.

**Public health risk.** The likelihood of an event that may adversely affect the health of human populations, with an emphasis on whether it may spread internationally or present a serious and direct danger.

**Rapid response team.** A group of trained individuals that is ready to respond quickly to an event. The composition and terms of reference are determined by the concerned country.

**Readiness.** It is the ability to quickly and appropriately respond when required to any emergencies.

**Regulations or administrative requirements.** All regulations, procedures, rules and standards.

**Relevant/other sectors.** Private and public sectors: such as all levels of the healthcare system (national, subnational and community/primary public health); NGOs; ministries of agriculture (zoonosis, veterinary laboratory), transport (transport policy, civil aviation, ports and maritime transport), trade and/or industry (food safety and quality control), foreign trade (consumer protection, control of compulsory standard enforcement), communication, defence, treasury or finance (customs), environment, interior, health, tourism; the home office; media; and regulatory bodies.

**Risk communication.** For public health emergencies includes the range of communication capacities required through the preparedness, response and recovery phases of a serious public health event to encourage informed decision making, positive behaviour change and the maintenance of trust.

**Simulation exercise.** An exercise is a form of practice, training, monitoring or evaluation of capabilities, involving the description or simulation of an emergency to which a described or simulated response is made. There are two categories of exercises: discussion-based (table top exercises) and operations-based (drills, functional exercises, field exercises and full-scale exercises) (WHO Simulation Exercise Manual <http://apps.who.int/iris/bitstream/10665/254741/1/>).

**Subnational level.** Refers to all administrative levels under the national level, including regional, provincial or state, and can also include municipality level.

**Surveillance.** The systematic ongoing collection, collation and analysis of data for public health purposes and the timely dissemination of public health information for assessment and public health response, as necessary.

**Syndrome.** A complex of signs and symptoms that tend to occur together, often characterizing a disease, in which the symptoms and/or signs coexist more frequently than would be expected by chance independently (adapted from Porta M, editor. A dictionary of epidemiology, sixth edition. International Epidemiological Association, Inc. New York: Oxford University Press; 2014).

**Trained staff.** Individuals that have educational credentials and/or received specific instruction that is applicable to a task or situation.

**Vector.** An insect or other invertebrate that transmits an infectious agent or parasite from one animal (including humans) or plant to another.

**Verification.** The provision of information by a State Party to WHO confirming the status of an event within the territory or territories of that State Party.

**WHO IHR contact point.** The unit within WHO that is accessible at all times for communications with the National IHR Focal Point.

**Zoonotic diseases (or zoonoses).** Any infection or infectious disease that is naturally transmissible from vertebrate animals to humans.

**Zoonotic event.** A manifestation of a disease in animals that creates a potential for a disease in humans as a result of human exposure to the animal source.



## **Annex 2: Mapping of Benchmarks to JEE/SPAR and HEPR**

**Table 1. Mapping of Benchmarks to JEE and SPAR.**

JEE Indicators (3rd edition, 2022)	SPAR Indicators (2nd edition, 2021)	WHO Benchmarks (2023)
<b>PREVENT</b>		
<b>P1 Legal Instruments</b>	<b>C1. Policy, legal and normative instruments to implement IHR</b>	<b>1. Legal Instruments</b>
P1.1. Legal instruments	C1.1. Policy, legal and normative instruments	1.1 Legal instruments are in place across relevant sectors to support and enable International Health Regulations (2005) (IHR) implementation and compliance
P1.2. Gender equity and equality in health emergencies	C1.2. Gender equality in health emergencies	1.2 Gender equity and equality principles are applied throughout IHR capacities
<b>P2. Financing</b>	<b>C.3. Financing</b>	<b>2. Financing</b>
P2.1. Financial resources for IHR implementation	C3.1. Financing for IHR implementation	2.1 Financing is available and disbursed for the implementation of IHR capacities
P2.2. Financial resources for public health emergency response	C3.2. Financing for public health emergency response	2.2 Financing available for timely response to health emergencies
<b>P3. IHR Coordination, National IHR Focal Point Functions and Advocacy</b>	<b>C2. IHR coordination and National IHR Focal Point</b>	<b>3. IHR Coordination, National IHR Focal Point Functions and Advocacy</b>
P3.1. National IHR Focal Point functions	C2.1. National IHR Focal Point functions	3.1 The IHR national focal point (NFP) is fully functional
P3.2. Multisectoral coordination mechanisms	C2.2. Multisectoral coordination mechanisms	3.2 Multisectoral IHR coordination mechanism effectively supports the implementation of prevention, detection and response activities
P3.3. Strategic planning for IHR, preparedness or health security	C2.3. Advocacy for IHR implementation	3.3 Strategic planning for IHR, preparedness or health security are in place and supported by functional advocacy mechanisms for IHR implementation

<b>4. Antimicrobial Resistance</b>	
<b>P4. Anti-Microbial Resistance (AMR)</b>	
P4.1. Multisectoral coordination on AMR	4.1 Effective multisectoral coordination for antimicrobial resistance (AMR)
P4.2. Surveillance of AMR	4.2 A surveillance system for AMR is in place
P4.3. Prevention of multidrug resistant organism (MDRO)	4.3 Effective mechanisms are in place to prevent multidrug resistant organisms (MDRO)
P4.4. Optimal use of antimicrobial medicines in human health	4.4 Optimize use of antimicrobial medicines in human health
P4.5 Optimal use of antimicrobial medicine in animal health and agriculture	4.5 Optimize use of antimicrobial medicines in animal health and agriculture
<b>P5. Zoonotic Diseases</b>	<b>5. Zoonotic Diseases</b>
P5.1. Surveillance of zoonotic diseases	5.1 A multisectoral surveillance system is in place for priority zoonotic diseases/pathogens
P5.2. Response to zoonotic diseases	5.2 A functional mechanism to respond to priority zoonotic diseases is in place
P5.3. Sanitary animal production practices	5.3 Safe practices in animal breeding and animal product systems limit the risk of zoonotic diseases
<b>P6. Food Safety</b>	<b>6. Food Safety</b>
P6.1. Surveillance of foodborne diseases and contamination	6.1 Surveillance systems are in place for the detection and monitoring of foodborne diseases and food contamination
P6.2. Response and management of food safety emergencies	6.2 A functional mechanism is in place for the response and management of food safety emergencies
<b>C12. Zoonotic diseases</b>	<b>C13. Food safety</b>
C12.1. One Health collaborative efforts across sectors on activities to address zoonoses	C13.1. Multisectoral collaboration mechanism for food safety events



<b>P8. Immunization</b>		<b>7. Immunization</b>	
P8.1. Vaccine's coverage (measles) as part of national programme		7.1 Optimum vaccine coverage (measles) as part of a national programme	
P8.2. National vaccine access and delivery		7.2 Provision of national vaccine access and delivery	
P8.3. Mass vaccination for epidemics of VPDs		7.3 An effective mechanism for mass vaccination of epidemics of vaccine preventable diseases (VPD) is in place	
<b>P7. Biosafety and Biosecurity</b>		<b>8. Biosafety and Biosecurity</b>	
P7.1. Whole-of-government biosafety and biosecurity system is in place for human, animal and agriculture facilities	C4.2. Implementation of a laboratory biosafety and biosecurity regime	8.1 Whole-of-government biosafety and biosecurity system is in place for relevant sectors including human, animal (domestic animals and wildlife) and agricultural facilities	
P7.2. Biosafety and biosecurity training and practices in all relevant sectors (including human, animal and agriculture)		8.2 Biosafety and biosecurity training and practices in relevant sectors including human health, animal health (domestic animals and wildlife) and agriculture are in place	
<b>DETECT</b>			
<b>D1. National Laboratory System</b>		<b>9. National Laboratory System</b>	
D1.1. Specimen referral and transport system	C4.1. Specimen referral and transport system	9.1 Specimen referral and transport system is in place for relevant sectors	
D1.2. Laboratory quality system	C4.3. Laboratory quality system	9.2 Laboratory quality system is in place	
D1.3. Laboratory testing capacity modalities	C4.4. Laboratory testing capacity modalities	9.3 Laboratory testing for detection of priority diseases is in place	
D1.4. Effective national diagnostic network	C4.5. Effective national diagnostic network	9.4 An effective national diagnostic network is in place	

<b>D2. Surveillance</b>		<b>C5. Surveillance</b>		<b>10. Surveillance</b>	
D2.1. Early warning surveillance function	C5.1. Early warning surveillance function	10.1 Early warning surveillance systems are well established and functional			
D2.2. Event verification and investigation	C5.2. Event management	10.2 Well functioning event verification and investigation systems are in place			
D2.3. Analysis and information sharing		10.3 Surveillance data and information are systematically analysed and shared to inform decision making for action			
<b>D3. Human Resources</b>		<b>C6. Human resources</b>		<b>11. Human Resources</b>	
D3.1. Multisectoral workforce strategy				11.1 An up-to-date multisectoral workforce strategy is in place	
D3.2. Human resources for implementation of IHR	C6.1. Human resources for implementation of IHR			11.2 Human resources are available to effectively implement IHR	
D3.4. Workforce surge during a public health event	C6.2. Workforce surge during a public health event			11.4 Multisectoral workforce surge strategy for health emergencies is well established and functional	
D3.3. Workforce training				11.3 Fit for purpose, competency-based education programmes are available for multisectoral workforce	
<b>RESPONSE</b>					
<b>R1 Health Emergency Management</b>		<b>C7. Health emergency management</b>		<b>Health Emergency Management</b>	
R1.1. Emergency risk assessment and readiness	C7.1. Planning for health emergencies	12A.1 Effective risk profiling, readiness assessment and rapid risk assessment (RRA) processes are in place and strongly linked to health emergency and disaster management plans and structures			
R1.2. Public health emergency operations centre (PHEOC)		12A.2 Public health emergency operations centre (PHEOC) capacities, procedures and plans are in place			
R1.3. Management of health emergency response	C7.2. Management of health emergency response	12A.3 A functional multisectoral all hazard health emergency response management system is in place			
R1.4. Activation and coordination of health personnel and teams in a public health emergency		12A.4 A system is in place for timely and effectively providing surge health personnel and teams during a health emergency			

R1.5. Emergency logistic and supply chain management	C7.3. Emergency logistic and supply chain management	12A.5 A system is in place for emergency logistics and supply chain management during a health emergency
R1.6. Research, development and innovation		12A.6 Research, development and innovation (RD&I) capacity for emergency management is in place
		<b>Health Emergency Management Additional Benchmarks</b>
		12B.1 All hazard health emergency and disaster risk management (EDRM) are mainstreamed across IHR capacities
		12B.2 Safe and resilient hospitals and health facilities are in place to rapidly respond to emergencies
		12B.3 Emergency resources, needs and gaps are identified and mapped, and information shared with decision-makers and partners based on country risk profiles to inform resource strategies and activities
		12B.4 Multisectoral planning for health emergency preparedness and response is in place
		<b>13. Linking Public Health and Security Authorities</b>
R2 Linking Public Health and Security Authorities		
R2.1. Public health and security authorities, (e.g. law enforcement, border control, customs) are involved during a suspect or confirmed biological event		13.1 Public health and security authorities (law enforcement, border control, customs) are linked during a suspected or confirmed biological, chemical or radiological event
		<b>R3 Health Service Provision</b>
R3.1. Case management	<b>C8 Health services provision</b>	<b>14. Health Services Provision</b>
	C8.1 Case management	14.1 Case management procedures are implemented for relevant IHR hazards
R3.2. Utilization of health services	C8.2 Utilization of health services	14.3 Mechanism is in place to ensure effective utilization of health services before, during and after health emergencies at all levels of health service delivery
R3.3. Continuity of essential health services (EHS)	C8.3 Continuity of essential health services (EHS)	14.2 Mechanism for continuity of essential health services (EHS) during a health emergency is well established

<b>R4. Infection Prevention and Control</b>	<b>C9. Infection prevention and control</b>	<b>15. Infection Prevention and Control</b>
R4.1. IPC programmes	C9.1. Infection prevention and control programmes	15.1 National and health facility level infection prevention and control (IPC) programmes are in place
R4.2. HCAI surveillance	C9.2 Health care-associated infections (HCAI) surveillance	15.2 A functioning health care acquired infection (HCAI) surveillance system is in place for public health decision-making
R4.3. Safe environment in health facilities	C9.3 Safe environment in health facilities	15.3 Provide a safe environment in all healthcare facilities
<b>R5. Risk communication and Community Engagement</b>	<b>C10. Risk communication and community engagement (RCCE)</b>	<b>16. Risk Communication, Community Engagement &amp; Infodemic Management</b>
R5.1. RCCE system for emergencies	C10.1. RCCE system for emergencies	<b>Risk Communication</b> 16A.1 Risk communication and community engagement (RCCE) systems with mechanisms for functions and resources are in place and integrated within broader health emergency programmes
R5.2. Risk communication	C10.2. Risk communication	16A.2 Mechanisms to deliver quality, timely, impactful risk communication are operational
R5.3. Community engagement	C10.3. Community engagement	<b>Community Engagement</b> 16B.1 Community engagement is integrated and prioritized within the management of health emergencies and unusual events
		<b>Risk Communication, Community Engagement &amp; Infodemic Management Additional Benchmarks</b>
		<b>Community Engagement</b> 16B.2 Inclusive community centred governance and management of health emergencies is in place
		16B.3 Capacity-building mechanisms for multisectoral community health workforce and community engagement in the management of health emergencies and resilience building are well established
		<b>Infodemic Management</b> 16C.1 An infodemic management system for health emergencies and unusual events is in place

## IHR RELATED HAZARDS AND POINTS OF ENTRY AND BORDER HEALTH

<b>PoE: Points of Entry and Border Health</b>	C11. Points of entry (PoEs) and border health Section 1. Information by type of PoE Section 2. Core capacities at PoEs and international travel-related measures	<b>17. Points of Entry and Border Health</b>
PoE1. Core capacity requirements at all times for PoEs (airports, ports and ground crossings)	C11.1. Core capacity requirements at all times for PoEs (airports, ports and ground crossings)	17.1 Routine core capacities at points of entry (PoEs) are in place
PoE2. Public health response at PoEs	C11.2. Public health response at PoEs	17.2 Public health responses at PoEs are in place
PoE3. Risk-based approach to international travel-related measures	C11.3. Risk-based approach to international travel-related measures	17.3 An effective multisectoral mechanism for risk-based approach to international travel related measures is in place
<b>CE. Chemical Events</b>	<b>C14. Chemical events</b>	<b>18. Chemical Events</b>
CE1. Mechanisms established and functioning for detecting and responding to chemical events or emergencies	C14.1. Resources for detection and alert	18.1 Mechanisms are in place for surveillance, alert and response to chemical events or emergencies, supported by an enabling environment
CE2. Enabling environment in place for management of chemical events		
<b>RE: Radiation Emergencies</b>	<b>C15 Radiation emergencies</b>	<b>19. Radiation Emergencies</b>
RE1. Mechanisms established and functioning for detecting and responding to radiological and nuclear emergencies	C15.1 Capacity and resources	19.1 Mechanisms are in place for detecting and responding to radiological and nuclear emergencies, supported by an enabling environment
RE2. Enabling environment in place for management of radiological and nuclear emergencies		



	H4.2 Regulatory and legal frameworks are developed and functional for timely trials, product review and approval
	H4.3 Adaptable manufacturing platforms are established and functional, and supported by prenegotiated agreements
	H4.4 Manufacturing capabilities are enhanced through ever-ready capabilities for rapid mobilization of medical countermeasure production during health emergencies
	H4.5 National regulatory frameworks for manufacturing platforms are developed and implemented for health emergencies
	H4.6 Coordinated demand aggregation systems are established and operational
	H4.7 Equitable and transparent needs-based allocation frameworks are in place for medical countermeasures during health emergencies
	H5.1 Operational support and logistics platforms are established and functional for health emergencies



**Table 2. Mapping of Benchmarks to HEPR**

HEPR Objective (L2)	HEPR Capabilities (L3)	Benchmark Mapping
	<b>C.1 Collaborative Surveillance</b>	
C.1.1 Strong national integrated disease, threat & vulnerability surveillance	C.1.1.1 Strong public health surveillance	10.1 Early warning surveillance systems are well established and functional 10.2 Well functioning event verification and investigation systems are in place 10.3 Surveillance data and information are systematically analysed and shared to inform decision making for action
C.1.1 Integrated disease, threat & vulnerability surveillance	C.1.1.2 Health service capacity, access, and usage monitoring	H1.1 A resilient monitoring system is established and fully functional to routinely monitor the key metrics of health service availability, capacity, access and usage
C.1.1 Integrated disease, threat & vulnerability surveillance	C.1.1.3 Contextual, Community and One Health insights	4.2 A surveillance system for AMR is in place 5.1 A multisectoral surveillance system is in place for priority zoonotic diseases/pathogens 6.1 Surveillance systems are in place for the detection and monitoring of foodborne diseases and food contamination
C.1.1 Integrated disease, threat & vulnerability surveillance	C.1.1.4 Collaboration: governance, innovation and integration	10.1 Early warning surveillance systems are well established and functional 15.2 A functioning healthcare acquired infection (HCAI) surveillance system is in place for public health decision-making
C.1.2 Effective diagnostics and laboratory capacity for pathogen and genomic surveillance	C.1.2.1 Decentralized testing capabilities at or near the point of care	10.3 Surveillance data and information are systematically analysed and shared to inform decision making for action 9.4 An effective national diagnostic network is in place

	C.1.2.2 Expanded laboratory capacity and collaboration, including genomics	<p>9.1 Specimen referral and transport system is in place for relevant sectors</p> <p>9.2 Laboratory quality system is in place</p> <p>9.3 Laboratory testing for detection of priority diseases is in place</p> <p>9.4 An effective national diagnostic network is in place</p> <p>H1.2 Genomic surveillance systems are in place and functional</p> <p>8.1 Whole-of-government biosafety and biosecurity system is in place for relevant sectors including human, animal (domestic animals and wildlife) and agricultural facilities</p> <p>8.2 Biosafety and biosecurity training and practices in relevant sectors including human health, animal health (domestic animals and wildlife) and agriculture are in place</p> <p>9.1 Specimen referral and transport system is in place for relevant sectors</p> <p>9.4 An effective national diagnostic network is in place</p>
	C.1.2.3 Risk-based biosafety and biosecurity practices to manage biorisk	<p>8.1 Whole-of-government biosafety and biosecurity system is in place for relevant sectors including human, animal (domestic animals and wildlife) and agricultural facilities</p> <p>8.2 Biosafety and biosecurity training and practices in relevant sectors including human health, animal health (domestic animals and wildlife) and agriculture are in place</p>
	C.1.2.4 Integrated laboratory networks, including data and sample sharing	<p>9.1 Specimen referral and transport system is in place for relevant sectors</p> <p>9.4 An effective national diagnostic network is in place</p>
C.1.3 Collaborative approaches for event detection, risk assessment, and response monitoring	C.1.3.1 Scalable architecture for integration	H1.3 Integrated, interoperable and standardized data systems and data sharing platforms are established and functional
	C.1.3.2 Tools for data collection, analysis, and sharing	H1.4 Integrated networks are created and functional to support surveillance information sharing and collaboration
	C.1.3.3 Information and data visualization for interpretation	
	C.1.3.4 Networks for enhanced information sharing and collaboration	

## C.2 Community Protection

C.2.1 Community engagement, risk communication and infodemic management	C.2.1.1 Listening to and understanding communities, and synthesizing insights	<p>16A.1 Risk communication and community engagement (RCCE) systems with mechanisms for functions and resources are in place and integrated within broader health emergency programmes</p> <p>16A.2 Mechanisms to deliver quality, timely, impactful risk communication are operational</p> <p>16B.1 Community engagement is integrated and prioritized within the management of health emergencies and unusual events</p> <p>16B.2 Inclusive community centred governance and management of health emergencies is in place</p> <p>16B.3 Capacity-building mechanisms for multisectoral community health workforce and community engagement in the management of health emergencies and resilience building are well established</p> <p>16C.1 An infodemic management system for health emergencies and unusual events is in place</p>
C.2.1 Community engagement, risk communication and infodemic management	C.2.1.2 Risk communication & community engagement	
C.2.1 Community engagement, risk communication and infodemic management	C.2.1.3 Community capacities, services & coordination	
C.2.1 Community engagement, risk communication and infodemic management	C.2.1.4 Multisectoral community engagement	<p>16B.1 Community engagement is integrated and prioritized within the management of health emergencies and unusual events</p> <p>16B.2 Inclusive community centred governance and management of health emergencies is in place</p> <p>16B.3 Capacity-building mechanisms for multisectoral community health workforce and community engagement in the management of health emergencies and resilience building are well established</p>

C.2.2 Population & environmental public health interventions	C.2.2.1 Prevent, detect and contain zoonotic spillover	5.1 A multisectoral surveillance system is in place for priority zoonotic diseases/pathogens 5.2 A functional mechanism to respond to priority zoonotic diseases is in place 5.3 Safe practices in animal breeding and animal product systems limit the risk of zoonotic diseases
C.2.2 Population & environmental public health interventions	C.2.2.2 Vector control	H2.1 Integrated vector control management systems are in place
C.2.2 Population & environmental public health interventions	C.2.2.3 Community access to water, sanitation, and hygiene	H2.2 Community-driven water, sanitation and hygiene (WASH) interventions are in place and effective
C.2.2 Population & environmental public health interventions	C.2.2.4 Public health & social measures	17.1 Routine core capacities at points of entry (PoEs) are in place 17.2 Public health responses at PoEs are in place 17.3 An effective multisectoral mechanism for risk-based approach to international travel related measures is in place 20.1 Leadership and governance dedicated to public health and social measures (PHSM) is in place in relevant sectors, at all levels and between levels
C.2.2 Population & environmental public health interventions	C.2.2.5 Vaccination	7.1 Optimum vaccine coverage (measles) as part of a national programme 7.2 Provision of national vaccine access and delivery 7.3 An effective mechanism for mass vaccination of epidemics of vaccine preventable diseases (VPD) is in place
C.2.3 Multisectoral action for social and economic protection	C.2.3.1 Strengthening social welfare and protection C.2.3.4 Ensuring food security	H2.3 Social welfare and protection systems are expanded and health emergency specific mechanisms are implemented H2.4 Resilient food production and distribution systems are functional to ensure food security during health emergencies

C.2.3 Multisectoral action for social and economic protection	C.2.3.2 Protection of livelihoods and business continuity	H2.5 The protection of livelihoods, business continuity and continuity of education and learning systems is in place and functional during health emergencies
C.2.3 Multisectoral action for social and economic protection	C.2.3.3 Continuity of education and learning	
C.2.3 Multisectoral action for social and economic protection	C.2.3.5 Addressing indirect health and mental health impacts	H2.6 Strategic scaling of community health services and mental health and psychosocial support (MHPSS) are in place for health emergencies
<b>C.3 Safe and Scalable Care</b>		
C.3.1 Scalable clinical care during emergencies	C.3.1.1 Scalable clinical care pathways	14.1 Case management procedures are implemented for relevant IHR hazards
C.3.1 Scalable clinical care during emergencies	C.3.1.2 Scalable infrastructure for safe clinical surge	14.2 Mechanism for continuity of essential health services (EHS) during a health emergency is well established
C.3.1 Scalable clinical care during emergencies	C.3.1.3 Stockpiles and supply chain for clinical care during emergencies	11.4 Multisectoral workforce surge strategy for health emergencies is well established and functional
C.3.2 Protection of health workers and patients	C.3.2.1 Water, sanitation, and hygiene (WASH) services	12A.4 A system is in place for timely and effectively providing surge health personnel and teams during a health emergency
C.3.2 Protection of health workers and patients	C.3.2.2 Infection Prevention and Control (IPC) in the context of health emergencies	12B.2 Safe and resilient hospitals and health facilities are in place to rapidly respond to emergencies
C.3.2 Protection of health workers and patients	C.3.2.3 Stockpiles and supply chain for clinical care during emergencies	12A.5 A system is in place for emergency logistics and supply chain management during a health emergency
C.3.2 Protection of health workers and patients	C.3.2.1 Water, sanitation, and hygiene (WASH) services	15.1 National and health facility level infection prevention and control (IPC) programmes are in place
C.3.2 Protection of health workers and patients	C.3.2.2 Infection Prevention and Control (IPC) in the context of health emergencies	15.3 Provide a safe environment in all healthcare facilities
C.3.2 Protection of health workers and patients	C.3.2.3 Stockpiles and supply chain for clinical care during emergencies	15.1 National and health facility level infection prevention and control (IPC) programmes are in place
C.3.2 Protection of health workers and patients	C.3.2.1 Water, sanitation, and hygiene (WASH) services	15.2 A functioning healthcare acquired infection (HCAI) surveillance system is in place for public health decision-making
C.3.2 Protection of health workers and patients	C.3.2.2 Infection Prevention and Control (IPC) in the context of health emergencies	15.3 Provide a safe environment in all healthcare facilities

C.3.3 Maintenance of essential health services	C. 3.2.3 Patient and workforce safety during health emergencies	11.3 Fit for purpose, competency-based education programmes are available for multisectoral workforce 12B.2 Safe and resilient hospitals and health facilities are in place to rapidly respond to emergencies 15.1 National and health facility level infection prevention and control (IPC) programmes are in place 15.3 Provide a safe environment in all healthcare facilities
C.3.3 Maintenance of essential health services	C.3.3.1 Assessment of essential health service needs, capacities and gaps	14.2 Mechanism for continuity of essential health services (EHS) during a health emergency is well established 14.3 Mechanism is in place to ensure effective utilization of health services before, during and after health emergencies at all levels of health service delivery
C.3.3 Maintenance of essential health services	C.3.3.2 Adaptation and augmentation of resources to deliver essential health services	14.2 Mechanism for continuity of essential health services (EHS) during a health emergency is well established
C.3.3 Maintenance of essential health services	C.3.3.3 Resilient infrastructure and workforce for health service delivery	11.1 An up-to-date multisectoral workforce strategy is in place 11.2 Human resources are available to effectively implement IHR 11.3 Fit for purpose, competency-based education programmes are available for multisectoral workforce 12B.2 Safe and resilient hospitals and health facilities are in place to rapidly respond to emergencies
<b>C.4 Access to Countermeasures</b>		
C.4.1 Fast-tracked research & development	C.4.1.1 Coordinated research built on a shared global R&D agenda	12A.6 Research, development and innovation (RD&I) capacity for emergency management is in place
C.4.1 Fast-tracked research & development	C.4.1.2 Enabling environment for research and discovery	12A.6 Research, development and innovation (RD&I) capacity for emergency management is in place
C.4.1 Fast-tracked research & development	C.4.1.3 Standardized platforms for equitable and scalable clinical trials	H4.1 Standardized platforms for conducting equitable and scalable clinical trials are created and functional

C.4.1 Fast-tracked research & development	C.4.1.4 Adapted regulatory and legal frameworks to enable timely trials, product review and approval	H4.2 Regulatory and legal frameworks are developed and functional for timely trials, product review and approval
C.4.2 Scalable manufacturing platforms	C.4.2.1 Adaptable manufacturing platforms	H4.3 Adaptable manufacturing platforms are established and functional, and supported by prenegotiated agreements
C.4.2 Scalable manufacturing platforms	C.4.2.2 Distributed manufacturing supported by pre-negotiated agreements	H4.4 Manufacturing capabilities are enhanced through ever-ready capabilities for rapid mobilization of medical countermeasure production during health emergencies
C.4.2 Scalable manufacturing platforms	C.4.2.3 Ever-ready capability for rapid mobilization	
C.4.2 Scalable manufacturing platforms	C.4.2.4 Strengthened regulatory framework to oversee set-up and scale-up of manufacturing platforms	H4.5 National regulatory frameworks for manufacturing platforms are developed and implemented for health emergencies
C.4.3 End-to-end health emergency supply chains	C.4.3.1 Essential medical countermeasures and their associated standards, policies and enablers are established for priority hazards	12A.5 A system is in place for emergency logistics and supply chain management during a health emergency
	C.4.3.2 Coordinated demand aggregation	H4.6 Coordinated demand aggregation systems are established and operational
	C.4.3.3 Coordinated supply and procurement	2.2 Financing available for timely response to health emergencies
		12A.5 A system is in place for emergency logistics and supply chain management during a health emergency
	C.4.3.4 Equitable and transparent needs-based allocations	H4.7 Equitable and transparent needs-based allocation frameworks are in place for medical countermeasures during health emergencies
	C.4.3.5 Resilient logistics and distribution	12A.5 A system is in place for emergency logistics and supply chain management during a health emergency



## C.5 Emergency Coordination

C.5.1 Strengthened workforce capacity for health emergencies	C.5.1.1 Public Health and emergency workforce	<p>11.1 An up-to-date multisectoral workforce strategy is in place</p> <p>11.2 Human resources are available to effectively implement IHR</p> <p>11.3 Fit for purpose, competency-based education programmes are available for multisectoral workforce</p> <p>11.4 Multisectoral workforce surge strategy for health emergencies is well established and functional</p> <p>12A.4 A system is in place for timely and effectively providing surge health personnel and teams during a health emergency</p>
C.5.1 Strengthened workforce capacity for health emergencies	C.5.1.2 Health emergency corps	<p>12A.2 Public health emergency operations centre (PHEOC) capacities, procedures and plans are in place</p> <p>12A.3 A functional multisectoral all hazard health emergency response management system is in place</p> <p>12A.4 A system is in place for timely and effectively providing surge health personnel and teams during a health emergency</p>
C.5.1 Strengthened workforce capacity for health emergencies	C.5.1.3 Interoperable surge deployment	<p>11.4 Multisectoral workforce surge strategy for health emergencies is well established and functional</p> <p>12A.4 A system is in place for timely and effectively providing surge health personnel and teams during a health emergency</p>
C.5.1 Strengthened workforce capacity for health emergencies	5.1.4 Connected health emergency leadership	<p>12A.2 Public health emergency operations centre (PHEOC) capacities, procedures and plans are in place</p> <p>12A.3 A functional multisectoral all hazard health emergency response management system is in place</p> <p>3.1 The IHR national focal point (NFP) is fully functional</p> <p>3.2 Multisectoral IHR coordination mechanism effectively supports the implementation of prevention, detection and response activities</p>

C.5.2 Health emergency preparedness, readiness and resilience	C.5.2.1 Capacity, risk and vulnerability assessment	<p>12A.1 Effective risk profiling, readiness assessment and rapid risk assessment (RRA) processes are in place and strongly linked to health emergency and disaster management plans and structures</p> <p>12B.1 All hazard health emergency and disaster risk management (EDRM) are mainstreamed across IHR capacities</p>
	C.5.2.2 Prioritized and costed plans	<p>3.3 Strategic planning for IHR, preparedness or health security are in place and supported by functional advocacy mechanisms for IHR implementation</p> <p>12A.1 Effective risk profiling, readiness assessment and rapid risk assessment (RRA) processes are in place and strongly linked to health emergency and disaster management plans and structures</p> <p>12B.4 Multisectoral planning for health emergency preparedness and response is in place</p>
	C.5.2.3 Resource mapping and mobilization	<p>12B.3 Emergency resources, needs and gaps are identified and mapped, and information shared with decision-makers and partners based on country risk profiles to inform resource strategies and activities</p> <p>2.1 Financing is available and disbursed for the implementation of IHR capacities</p>
	C.5.2.4 Implementation, monitoring and review	Included in all Benchmarks

<p>C.5.3 Health emergency alert and response coordination</p>	<p>C.5.3.1 Standardized triggers and rapid resources for immediate response</p>	<p>6.2 A functional mechanism is in place for the response and management of food safety emergencies</p> <p>10.1 Early warning surveillance systems are well established and functional</p> <p>10.3 Surveillance data and information are systematically analysed and shared to inform decision making for action</p> <p>12A.1 Effective risk profiling, readiness assessment and rapid risk assessment (RRA) processes are in place and strongly linked to health emergency and disaster management plans and structures</p> <p>18.1 Mechanisms are in place for surveillance, alert and response to chemical events or emergencies, supported by an enabling environment</p> <p>19.1 Mechanisms are in place for detecting and responding to radiological and nuclear emergencies, supported by an enabling environment</p> <p>The IHR national focal point (NFP) is fully functional</p> <p>3.2 Multisectoral IHR coordination mechanism effectively supports the implementation of prevention, detection and response activities</p> <p>3.3 Strategic planning for IHR, preparedness or health security are in place and supported by functional advocacy mechanisms for IHR implementation</p> <p>12B.4 Multisectoral planning for health emergency preparedness and response is in place</p>
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C.5.3 Health emergency alert and response coordination	C.5.3.2 Timely, evidence-based and resourced response strategies	5.2 A functional mechanism to respond to priority zoonotic diseases is in place 10.3 Surveillance data and information are systematically analysed and shared to inform decision making for action 12A.1 Effective risk profiling, readiness assessment and rapid risk assessment (RRA) processes are in place and strongly linked to health emergency and disaster management plans and structures 12A.2 Public health emergency operations centre (PHEOC) capacities, procedures and plans are in place 12A.3 A functional multisectoral all hazard health emergency response management system is in place 13.1 Public health and security authorities (law enforcement, border control, customs) are linked during a suspected or confirmed biological, chemical or radiological event
C.5.3 Health emergency alert and response coordination	C.5.3.3 Operational support and logistics platform	H5.1 Operational support and logistics platforms are established and functional for health emergencies
C.5.3 Health emergency alert and response coordination	C.5.3.4 Monitoring, review, and adjustments to response	Included in all Benchmarks

Mapping is based on HEPR L1-L3 as of 23.05.2023, based on *Strengthening health emergency prevention, preparedness, response and resilience*. Geneva: World Health Organization; 2023. Licence: CC BY-NC-SA 3.0 IGO.



# **Annex 3: Summary of changes from WHO Benchmarks for International Health Regulations (IHR) Capacities (2019)**

	WHO Benchmarks 2019	WHO Benchmarks 2023	Changes
<b>Title</b>	WHO benchmarks for IHR capacities	WHO benchmarks for strengthening health emergency capacities: <i>To support implementation of IHR and HEPR capacities</i>	Expanded to include both IHR and HEPR capacities
<b>Number of technical areas</b>	18	21	Expanded to reflect lessons learned from recent health emergencies and current IHR MEF structure
<b>Number of benchmarks</b>	44	80	62 BMs strengthening both IHR and HEPR capacities with additional 18 BMs focusing on HEPR capacities beyond IHR
<b>Sectoral engagement</b>	All actions proposed as IHR benchmark actions	Actions are identified based on expected sectoral engagement as health/health and other sectors/other sectors	Expected sectoral engagement for the actions are specified

### Technical areas and benchmarks

WHO Benchmarks 2019	WHO Benchmarks 2023	Changes
<b>NATIONAL LEGISLATION POLICY AND FINANCING</b>	<b>Legal Instruments</b>	Legal instruments placed as a separate technical area aligning with JEE 3rd ed. and SPAR 2nd ed.
<b>Benchmark 1.1:</b> Domestic legislation, laws, regulations, policy and administrative requirements are available in all relevant sectors and effectively enable compliance with the IHR	<b>Benchmark 1.1:</b> Legal instruments are in place across relevant sectors to support and enable International Health Regulations (2005) (IHR) implementation and compliance	Content updated
	<b>Benchmark 1.2:</b> Gender equity and equality principles are applied throughout IHR capacities	New benchmark added aligning with JEE 3rd ed. and SPAR 2nd ed.

		<b>Financing</b>			Financing placed as a separate technical area aligning with JEE 3rd ed. and SPAR 2nd ed.
<b>Benchmark 1.2:</b> Financing is available for the implementation of IHR capacities	2	Benchmark 2.1: Financing is available and disbursed for the implementation of IHR capacities	3		Content updated
<b>Benchmark 1.3:</b> Financing available for timely response to public health emergencies	3	<b>Benchmark 2.2:</b> Financing available for timely response to health emergencies	4		Content updated
<b>IHR COORDINATION, COMMUNICATION AND ADVOCACY AND REPORTING</b>		<b>IHR Coordination, National IHR Focal Point Functions and Advocacy</b>			
<b>Benchmark 2.1:</b> The IHR NFP is fully functional	4	<b>Benchmark 3.1:</b> The IHR national focal point (NFP) is fully functional	5		Content updated
<b>Benchmark 2.2:</b> Multisectoral IHR coordination mechanism effectively supports the implementation of prevention, detection and response activities	5	<b>Benchmark 3.2:</b> Multisectoral IHR coordination mechanism effectively supports the implementation of prevention, detection and response activities	6		Content updated
		<b>Benchmark 3.3:</b> Strategic planning for IHR, preparedness or health security are in place and supported by functional advocacy mechanisms for IHR implementation	7		New benchmark added aligning with JEE 3rd ed and SPAR 2nd ed.
<b>ANTIMICROBIAL RESISTANCE</b>		<b>Antimicrobial Resistance</b>			
<b>Benchmark 3.1:</b> Effective multisectoral coordination on AMR	6	<b>Benchmark 4.1:</b> Effective multisectoral coordination for antimicrobial resistance (AMR)	8		Content updated
<b>Benchmark 3.2:</b> Surveillance system of AMR is in place	7	<b>Benchmark 4.2:</b> A surveillance system for AMR is in place	9		Content updated



<b>Benchmark 3.3:</b> Infection prevention and control is in place	8			Infection prevention and control developed into new technical area Infection Prevention and Control (please see benchmarks 15.1-15.3 below).
		<b>Benchmark 4.3:</b> Effective mechanisms are in place to prevent multidrug resistant organisms (MDRO)	10	New benchmark for aligning with JEE 3rd ed.
<b>Benchmark 3.4:</b> Optimize use of antimicrobial medicines in human and animal health and agriculture	9	<b>Benchmark 4.4:</b> Optimize use of antimicrobial medicines in human health	11	Split into two benchmarks differentiating between human health and animal health and agriculture, aligning with JEE 3rd ed.
		<b>Benchmark 4.5:</b> Optimize use of antimicrobial medicines in animal health and agriculture	12	
<b>ZOOONOTIC DISEASE</b>		<b>Zoonotic Diseases</b>		
<b>Benchmark 4.1:</b> Coordinated surveillance system is in place for priority zoonotic diseases/pathogens	10	<b>Benchmark 5.1:</b> A multisectoral surveillance system is in place for priority zoonotic diseases/pathogens	13	Content updated
<b>Benchmark 4.2:</b> Functional mechanism to respond to priority zoonotic diseases in place	11	<b>Benchmark 5.2:</b> A functional mechanism to respond to priority zoonotic diseases is in place	14	Content updated
		<b>Benchmark 5.3:</b> Safe practices in animal breeding and animal product systems limit the risk of zoonotic diseases	15	New benchmark aligning with JEE 3rd ed.
<b>FOOD SAFETY</b>		<b>Food safety</b>		
<b>Benchmark 5.1:</b> Surveillance systems in place for the detection and monitoring of foodborne diseases and food contamination	12	<b>Benchmark 6.1:</b> Surveillance systems are in place for the detection and monitoring of foodborne diseases and food contamination	16	Content updated

<b>Benchmark 5.2:</b> A functional mechanism is in place for the response and management of food safety emergencies	13	<b>Benchmark 6.2:</b> A functional mechanism is in place for the response and management of food safety emergencies	17	Content updated
<b>IMMUNIZATION</b>		<b>Immunization</b>		
<b>Benchmark 6.1:</b> Optimum vaccine coverage (measles) as part of a national programme	14	<b>Benchmark 7.1:</b> Optimum vaccine coverage (measles) as part of a national programme	18	Content updated
<b>Benchmark 6.2:</b> Provision of national vaccine access and delivery	15	<b>Benchmark 7.2:</b> Provision of national vaccine access and delivery	19	Content updated
		<b>Benchmark 7.3:</b> An effective mechanism for mass vaccination of epidemics of vaccine preventable diseases (VPD) is in place	20	New benchmark aligning with JEE 3rd ed.
<b>NATIONAL LABORATORY SYSTEM</b>		<b>National Laboratory System</b>		
<b>Benchmark 7.1:</b> Laboratory testing for detection of priority diseases is in place	16	<b>Benchmark 9.3:</b> Laboratory testing for detection of priority diseases is in place	21	Sequence changed aligning with JEE 3rd ed. Content updated
<b>Benchmark 7.2:</b> Specimen referral and transport system are in place for all relevant sectors	17	<b>Benchmark 9.1:</b> Specimen referral and transport system is in place for relevant sectors	22	Sequence changed aligning with JEE 3rd ed. and SPAR 2nd ed. Content updated
<b>Benchmark 7.3:</b> Effective national diagnostic network is in place	18	<b>Benchmark 9.4:</b> An effective national diagnostic network is in place	23	Sequence changed aligning with JEE 3rd ed. Content updated
<b>Benchmark 7.4:</b> Laboratory quality system is in place	19	<b>Benchmark 9.2:</b> Laboratory quality system is in place	24	Sequence changed aligning with JEE 3rd ed. Content updated
<b>BIOSAFETY AND BIOSECURITY</b>		<b>Biosafety and Biosecurity</b>		
<b>Benchmark 8.1:</b> Whole-of-government biosafety and biosecurity system is in place for all sectors (including human, animal (domestic animals and wildlife) and environment facilities)	20	<b>Benchmark 8.1:</b> Whole-of-government biosafety and biosecurity system is in place for relevant sectors including human, animal (domestic animals and wildlife) and agricultural facilities	25	Title and content updated

<b>Benchmark 8.2:</b> Biosafety and biosecurity training and practices in all relevant sectors (including human, animal (domestic animals and wildlife) and environment)	21	<b>Benchmark 8.2:</b> Biosafety and biosecurity training and practices in relevant sectors including human health, animal health (domestic animals and wildlife) and agriculture are in place	26	Title and content updated
<b>SURVEILLANCE</b>				
<b>Benchmark 9.1:</b> Functional surveillance system to identify potential events of concern for public health and health security is in place	22	<b>Benchmark 10.1:</b> Early warning surveillance systems are well established and functional	27	Updated to focus on early warning surveillance aligning with JEE 3rd ed. and SPAR 2nd ed.
<b>Benchmark 9.2:</b> Surveillance system is supported by electronic tools	23	<b>Benchmark 10.2:</b> Well functioning event verification and investigation systems are in place	28	Updated to focus on event verification aligning with JEE 3rd ed. and SPAR 2nd ed.
<b>Benchmark 9.3:</b> Systematic analysis of surveillance data for action is in place	24	<b>Benchmark 10.3:</b> Surveillance data and information are systematically analysed and shared to inform decision making for action	29	Updated to include information sharing aligning with JEE 3rd ed.
<b>HUMAN RESOURCES</b>				
<b>Benchmark 10.1:</b> An up-to-date, multisectoral workforce strategy is in place	25	<b>Benchmark 11.1:</b> An up-to-date multisectoral workforce strategy is in place	30	Content updated
<b>Benchmark 10.2:</b> Human resources are available to effectively implement IHR	26	<b>Benchmark 11.2:</b> Human resources are available to effectively implement IHR	31	Content updated
<b>Benchmark 10.3:</b> In-service trainings are available	27	<b>Benchmark 11.3:</b> Fit for purpose, competency-based education programmes are available for multisectoral workforce	32	Amalgamated into one benchmark to align with JEE 3rd ed. and reduce number of benchmarks.
Benchmark 10.4: Field epidemiology training programme or other applied epidemiology training programme is in place	28			

		<p><b>Benchmark 11.4:</b> Multisectoral workforce surge strategy for health emergencies is well established and functional</p>	33	New benchmark aligning with JEE 3rd ed. and SPAR 2nd ed.
<b>EMERGENCY PREPAREDNESS</b>		<b>Health Emergency Management</b>		New technical area which merges three technical areas from the 1st ed. aligning with JEE 3rd ed. and SPAR 2nd ed.
		<b>12A Health Emergency Management</b> <b>12B Additional Benchmarks</b>		Health Emergency Management presented in two subareas: Subarea 12A includes benchmarks that align with JEE 3rd ed. and SPAR 2nd ed. Subarea 12B includes benchmarks beyond JEE and SPAR.
<b>Benchmark 11.1:</b> Strategic emergency risk assessments conducted, and emergency resources identified, mapped and utilized	29	<b>Benchmark 12A.1:</b> Effective risk profiling, readiness assessment and rapid risk assessment (RRA) processes are in place and strongly linked to health emergency and disaster management plans and structures	34	Title and content updated and benchmark split into two. 12A.1 aligns with JEE 3rd ed. and SPAR 2nd ed. and 12B.3 is beyond JEE and SPAR.
		<b>Benchmark 12B.3:</b> Emergency resources, needs and gaps are identified and mapped, and information shared with decision-makers and partners based on country risk profiles to inform resource strategies and activities	35	
<b>Benchmark 11.2:</b> Multisectoral planning for health emergency preparedness and response is in place	30	<b>Benchmark 12B.4:</b> Multisectoral planning for health emergency preparedness and response is in place	36	Content updated

<b>EMERGENCY RESPONSE OPERATIONS</b>		<b>Health Emergency Management</b>	
<b>Benchmark 12.1:</b> Functional emergency response coordination is in place	31	<b>Benchmark 12A.3:</b> A functional multisectoral all hazard health emergency response management system is in place	37
<b>Benchmark 12.2:</b> Emergency operations centre (EOC) capacities, procedures and plans are in place	32	<b>Benchmark 12A.2:</b> Public health emergency operations centre (PHEOC) capacities, procedures and plans are in place	38
<b>Benchmark 12.3:</b> Emergency exercise management programme is in place	33		Content from 1st edition has been included across all benchmarks (all technical areas) as an essential component to achieve all capacities
<b>MEDICAL COUNTERMEASURES AND PERSONNEL DEPLOYMENT</b>		<b>Health Emergency Management</b>	
<b>Benchmark 14.2:</b> System is in place for activating and coordinating health personnel during a public health emergency	34	<b>Benchmark 12A.4:</b> A system is in place for timely and effectively providing surge health personnel and teams during a health emergency	39
<b>Benchmark 14.1:</b> System is in place for activating and coordinating medical countermeasures during a public health emergency	35	<b>Benchmark 12A.5:</b> A system is in place for emergency logistics and supply chain management during a health emergency	40
<b>Benchmark 14.3:</b> Case management procedures implemented for relevant IHR hazards	36		Moved to the new technical area Health Service Provision, please see benchmark 14.1 below

	<b>Health Emergency Management</b>			
	<b>Benchmark 12A.6:</b> Research, development and innovation (RD&I) capacity for emergency management is in place	41		New benchmark aligning with JEE 3rd ed.
	<b>Benchmark 12B.1:</b> All hazard health emergency and disaster risk management (EDRM) are mainstreamed across IHR capacities	42		New benchmark to reflect on lessons learned from recent health emergencies
	<b>Benchmark 12B.2:</b> Safe and resilient hospitals and health facilities are in place to rapidly respond to emergencies	43		New benchmark to reflect on lessons learned from recent health emergencies
	<b>LINKING PUBLIC HEALTH AND SECURITY AUTHORITIES</b>			
<b>Benchmark 13.1:</b> Public health and security authorities (law enforcement, border control, customs) linked during a suspect or confirmed biological, chemical or radiological event	37			Content updated
	<b>Health Service Provision</b>			New technical area aligning with JEE 3rd ed. and SPAR 2nd ed.
<b>Benchmark 14.1:</b> Case management procedures are implemented for relevant IHR hazards	45			Content updated, from 1st edition benchmark 14.3
<b>Benchmark 14.2:</b> Mechanism for continuity of essential health services (EHS) during a health emergency is well established	46			New benchmark aligning with JEE 3rd ed. and SPAR 2nd ed.
<b>Benchmark 14.3:</b> Mechanism is in place to ensure effective utilization of health services before, during and after health emergencies at all levels of health service delivery	47			New benchmark aligning with JEE 3rd ed. and SPAR 2nd ed.

			<b>Infection Prevention and Control</b>			New technical area aligning with JEE 3rd ed. and SPAR 2nd ed.
			<b>Benchmark 15.1:</b> National and health facility level infection prevention and control (IPC) programmes are in place	48		Title and content updated, expanded from 1st edition benchmark 3.3.
			<b>Benchmark 15.2:</b> A functioning healthcare acquired infection (HCAI) surveillance system is in place for public health decision-making	49		New benchmark aligning with JEE 3rd ed. and SPAR 2nd ed.
			<b>Benchmark 15.3:</b> Provide a safe environment in all healthcare facilities	50		New benchmark aligning with JEE 3rd ed. and SPAR 2nd ed.
			<b>RISK COMMUNICATION</b>			Technical area title changed to reflect broader scope
			<b>Risk Communication, Community Engagement &amp; Infodemic Management</b>			Risk Communication, Community Engagement & Infodemic Management is presented in two subareas:
			<b>Risk Communication, Community Engagement &amp; Infodemic Management</b>			Subarea Risk Communication, Community Engagement & Infodemic Management includes benchmarks that align with JEE 3rd ed. and SPAR 2nd ed.
			<b>Risk Communication, Community Engagement &amp; Infodemic Management Additional Benchmarks</b>			Subarea Additional Benchmarks includes benchmarks beyond JEE and SPAR.
			<b>Benchmark 16A.1:</b> Risk communication and community engagement (RCCE) systems with mechanisms for functions and resources are in place and integrated within broader health emergency programmes	51		Title and content updated to include risk communication and community engagement aligning with JEE 3rd ed. and SPAR 2nd ed.
			<b>Benchmark 15.1:</b> Risk communication systems for unusual events and emergencies is in place	38		



<b>Benchmark 15.2:</b> Coordination of risk communication is effective	39	<b>Benchmark 16A.2:</b> Mechanisms to deliver quality, timely, impactful risk communication are operational	52	Title and content updated to include risk communication and community engagement aligning with JEE 3rd ed. and SPAR 2nd ed.
<b>Benchmark 15.3:</b> Effective communication with communities	40	<b>Benchmark 16B.1:</b> Community engagement is integrated and prioritized within the management of health emergencies and unusual events <b>Benchmark 16B.2:</b> Inclusive community centred governance and management of health emergencies is in place <b>Benchmark 16B.3:</b> Capacity-building mechanisms for multisectoral community health workforce and community engagement in the management of health emergencies and resilience building are well established	53 54 55	Title and content updated to include risk communication and community engagement aligning with JEE 3rd ed. and SPAR 2nd ed. New benchmark, beyond JEE and SPAR New benchmark, beyond JEE and SPAR
		<b>Benchmark 16C.1:</b> An infodemic management system for health emergencies and unusual events is in place	56	New benchmark to reflect on lessons learned from recent health emergencies
		<b>POINTS OF ENTRY</b>		Technical area title changed to reflect broader scope aligning with JEE 3rd ed. and SPAR 2nd ed.
<b>Benchmark 16.1:</b> Routine capacities at points of entry are in place	41	<b>Benchmark 17.1:</b> Routine core capacities at points of entry (PoEs) are in place	57	Title and content updated
<b>Benchmark 16.2:</b> Effective public health response at points of entry	42	<b>Benchmark 17.2:</b> Public health responses at PoEs are in place	58	Title and content updated

		<b>Benchmark 17.3:</b> An effective multisectoral mechanism for risk-based approach to international travel related measures is in place	59	New benchmark aligning with JEE 3rd ed. and SPAR 2nd ed.
<b>CHEMICAL EVENTS</b>				
	<b>Benchmark 17.1:</b> Mechanisms are in place for surveillance, alert and response to chemical events or emergencies	43	60	Title and content updated
<b>RADIATION EMERGENCIES</b>				
	<b>Benchmark 18.1:</b> Mechanism is in place for detecting and responding to radiological and nuclear emergencies	44	61	Title and content updated
<b>Public Health and Social Measures</b>				New technical area to reflect on lessons learned from recent health emergencies
	<b>Benchmark 20.1:</b> Leadership and governance dedicated to public health and social measures (PHSM) is in place in relevant sectors, at all levels and between levels		62	New benchmark to reflect on lessons learned from recent health emergencies
	<b>Additional benchmarks for health emergency capacities beyond IHR</b>		+18	New benchmarks to include HEPR capacities beyond IHR
<b>Total count of benchmarks</b>		<b>44</b>	<b>80</b>	<b>36 new benchmarks</b>

# **Annex 4: Declaration of Interests from WHO Experts at the global consultative meeting, March 13-15 2023**

All external experts submitted to WHO a declaration of interest disclosing potential conflicts of interest that might affect, or might reasonably be perceived to affect, their objectivity and independence in relation to the subject matter of the meeting. WHO reviewed each of those and had concluded that none could give rise to a potential or reasonably perceived conflict of interest related to the subjects discussed at the meeting.

