December 2022

Mpox Strategic Preparedness, Readiness, and Response Plan

GLOBAL MONITORING AND EVALUATION FRAMEWORK

World Health Organization

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In a Biosafety Level 3 (BSL-3) laboratory, a laboratory technician works on Mpox samples prior to the diagnosis process.
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Contents

Acronyms

5Cs	Five Core Components
AAR	After Action Review
AEFI	Adverse Events Following Immunization
CO	Country Office
EQA	External Quality Assurance
FDA	United States Food and Drug Administration
HAI	Health Care-Associated Infection
HQ	Headquarters
M&E	Monitoring and Evaluation
MEURI	Monitored Emergency Use of Unregistered and Investigational Interventions
MOPH	Ministry of Public Health
IAR	Intra-Action Review
IHR	International Health Regulations (2005)
IPC	Infection Prevention and Control
IMST	Incident Management Support Team
OSL	Operations Support and Logistics
PCR	Polymerase Chain Reaction
PEPV	Post-Exposure Preventive Vaccine
PHEIC	Public Health Emergency of International Concern
PoE	Point of Entry
PPE	Personal Protective Equipment
PPV	Preventive (Pre-Exposure) Vaccination
RCCE	Risk Communication and Community Engagement
RO	Regional Office
SPRP	Strategic Preparedness, Readiness, and Response Plan
WHO	World Health Organization

Introduction

On 23 July 2022, the WHO Director-General declared the global multi-country Mpox outbreak to be a Public Health Emergency of International Concern (PHEIC). The Mpox Strategic Preparedness, Readiness and Response Plan (SPRP) has the overarching goal to stop the Mpox outbreak with three strategic objectives:

1. Interrupt human-to-human transmission of Mpox, with a focus on groups at high risk of exposure;
2. Protect vulnerable groups at risk of severe Mpox disease;
3. Minimize zoonotic transmission of Mpox virus.

This Mpox SPRP Global Monitoring & Evaluation (M&E) Framework, also referred to as the Framework, aims to monitor and report on global progress towards these objectives, including information about country-level response efforts and WHO support to Member States. Regular collection and analysis of data on these objectives, alongside the ongoing tracking of the epidemiological situation, are key to informing decision-making, operational adjustments, as well as ensuring transparency and accountability for achieving the goal to stop the Mpox outbreak. This document suggests reporting indicators for monitoring of the global response to the Mpox PHEIC as articulated in the Mpox SPRP and Operational Planning Guidelines for countries. The purpose of this is to:

- Understand global and country-level actions towards meeting the SPRP strategic objectives;
- Document WHO support to Member States, in the form of quantifiable indicators and milestones.

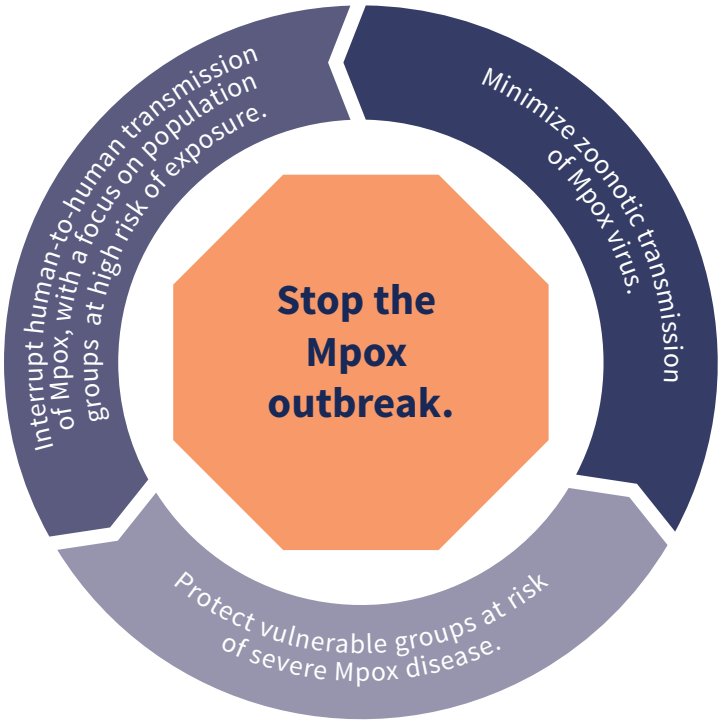
Target audience

This document is for global and national health authorities and outbreak response teams. It will be particularly useful for M&E focal points at national, regional, and global levels (including at WHO offices) responsible for managing, tracking, and reporting on the epidemiological situation and response. This Framework serves to inform Member States and donors about how progress is being assessed over time. In addition to a dashboard, WHO will publish progress on country-level indicators and WHO milestones in public reports.

Scope

The scope of this Framework corresponds with the time frame of the Mpox SPRP (July 2022 – June 2023). This Framework is a collaborative initiative driven by WHO's global and regional Incident Management Support Teams (IMSTs) and interfaces with other existing regional reporting frameworks. It also interfaces with response reviews such as those under the Mpox International Health Regulations (IHR) Emergency Committee, that advises the WHO Director-General on the PHEIC status and the associated Temporary Recommendations that are directed at States Parties. Finally, the Framework is a complement to other existing financial monitoring, stakeholder coordination, and feedback mechanisms.

Figure 1. Strategic objectives of the Mpox SPRP



Methodology

This Framework uses a combination of country-level indicators and WHO milestones to provide an overview of response actions and progress towards the three strategic objectives.

Data collection

There are a few primary sources of information for this Framework, drawing upon data from the country, regional and global levels as needed. A consolidated, modular approach to data collection was introduced to allow for flexibility in the timing and level of detail gathered, whilst addressing the need for information across different topical areas. The basis of monitoring and evaluation for country-level indicators involves two main components: (1) Policy Tracker and (2) Survey on Implementation of Outbreak Response Measures. These components and respective modules are summarized below, with further details in the Annex.

1 Policy Tracker: a monthly landscape assessment of key epidemiologic information and control measures at country-level, to gauge any correlation that these may have on the evolution of the outbreak.

   Module 1A: Questions on surveillance collected only once, or updated if there is a change in policy

   Module 1B: High-level questions on response measures collected monthly

2 Survey on implementation of outbreak response measures: a quarterly/semi-annual survey with more detailed questions to identify gaps in country-level response

   Module 2A: Implementation of response actions aligned with the Mpox SPRP priorities and IHR Temporary Recommendations to State Parties[1]

   Module 2B: Access and allocation of therapeutics and vaccines

The data collection tool is developed using the LimeSurvey survey tool, hosted on the WHO DataForms platform. Coverage for data collection extends to all Member States, and includes all measures since 1 May 2022, with priority given to prospective collection. In addition to the data collection instrument, additional data sources are identified on an indicator basis, as showcased in the annex.

Data management and validation

Data will be validated by the data source focal points and then logically checked by the WHO. All data are subject to continuous verification by WHO (with the exception of data provided by third-party sites, which are not validated by WHO) and may change based on retrospective updates or reviews. The identified data sources will be integrated into the modern data architecture, which will contribute to streamlining the data cycle process, ensuring quality, completeness and timeliness of the data.

Country-level indicators analysis and reporting

The country-level indicators set out in this Framework for global monitoring align with the strategic objectives of the SPRP and were selected based on their usefulness to provide a periodic situational snapshot about country, regional or global conditions and inform operational response actions.

The Framework relies on regular reporting of data and information. Completeness and geographic coverage may vary if there are delays in data collection or sharing. To help mitigate this, a number of indicators were selected based on data availability through existing global platforms and reporting tools so that data collection can be consistent and timely.

WHO milestones

To achieve the strategic objectives, the Mpox SPRP highlights five core components (5Cs) of preparedness, readiness and response that provide a framework for aligning international and national efforts, namely emergency coordination, collaborative surveillance, community protection, safe and scalable care and finally counter measures and research. Moreover, WHO support related to the global outbreak of Mpox reinforces these core components and can be reflected in key milestones.

Milestones are activities or products that mark measurable contributions to the 5Cs, and ultimately progress towards achieving the strategic objectives. WHO headquarters (HQ) and regional offices (ROs) implementing units will report on milestones, with data collected on a quarterly basis facilitated through the WHO HQ IMST.

Limitations

There are some limitations to monitoring the technical implementation of Mpox SPRP. One limitation resides in the global coverage of the framework, which makes it more challenging to collate and validate data that are collected at the country level. In order to mitigate this challenge, the data collection process is decentralized and some roles are delegated to the regional level, including the regional WHO IMST and an internal WHO M&E network. The internal WHO M&E network will continue to play a role in collecting, validating and reporting on the SPRP progress.

1 https://www.who.int/news/item/01-11-2022-third-meeting-of-the-international-health-regulations-(2005)-(ihr)-emergency-committee-regarding-the-multi-country-outbreak-of-monkeypox

Global monitoring (country-level indicators)

The following is an overview of country-level indicators that will be used for the global monitoring of the implementation of the Mpox SPRP, according to the strategic objectives.

Interrupt human-to-human transmission of Mpox, with a focus on population groups at high risk of exposure[2]

Indicator	Reporting frequency
Indicator 1.1: Number of laboratory-confirmed cases per week	Weekly
Indicator 1.2: Percentage of completeness of Member States Mpox case reporting to WHO	Weekly
Indicator 1.3: Percentage of Member States with national orthopoxvirus testing capacity available	Monthly
Indicator 1.4: Percentage of Member States reporting cases that publicly share Mpox genetic sequence data	Quarterly
Indicator 1.5: Percentage of Member States with capability or access to timely sequencing of Mpox	Quarterly
Indicator 1.6: Percentage of Member States participating in WHO External Quality Assessment (EQA) Programme	Quarterly
Indicator 1.7: Percentage of Member States with IPC Standard Operating Procedures, including for isolation of cases, in health care facilities in place	Quarterly
Indicator 1.8: Percentage of Member States with IPC Standard Operating Procedures for community settings in place	Quarterly

Protect vulnerable groups at risk of severe Mpox disease[3]

Indicator	Reporting frequency
Indicator 2.1: Percentage of Member States with access to second or third generation Mpox vaccine	Quarterly
Indicator 2.2: Percentage of Member States with pre- and/or post-exposure vaccination recommendations in place	Quarterly
Indicator 2.3: Percentage of Member States with a system to monitor vaccine doses administered available	Monthly
Indicator 2.4: Percentage of Member States with a surveillance system to monitor adverse events following immunization in place	Quarterly
Indicator 2.5: Percentage of Member States with Mpox antivirals for treatment of severe cases available	Monthly
Indicator 2.6: Percentage of Member States with treatment protocol for management of hospitalized cases in place	Quarterly
Indicator 2.7: Percentage of Member States with Surveillance for health care-associated infections (HAI), including patients and occupational health worker exposures and infections, in place	Quarterly

2 Population groups at high risk of exposure: At the time of publication, in many settings the primary population group at high risk of exposure was men who have sex with men, particularly those who have multiple partners. In other settings, heterosexual exposure is also emerging as an important risk in this outbreak. Some communities may be at risk of zoonotic transmission. It remains critical to appreciate that other population groups may also be at risk of exposure as the outbreak evolves.

3 Vulnerable groups at risk of severe monkeypox disease: At the time of publication, this includes people with immune suppression (such as those on immunosuppressive therapy or living with poorly controlled HIV), people who are pregnant, and children.

Minimize zoonotic transmission of Mpox virus[4]

Indicator	Reporting frequency
Indicator 3.1: Percentage of Member States with established/activated One Health coordination mechanism or other multisectoral coordination mechanism for understanding, monitoring, and managing the risk of animal-to-human and human-to-animal transmission	Quarterly
Indicator 3.2: Percentage of Member States that have undertaken detailed case investigations and studies to characterize transmission patterns, including suspected or documented spillovers from and spillback to animals	Quarterly
Indicator 3.3: Percentage of countries that have included actions to minimize opportunities for animal-to-human and/or human-to-animal transmission in their national strategy	Quarterly

Complementary indicators

Indicator	Reporting frequency
Indicator 4.1: Proportion of supplies requested through WHO supply mechanisms that are delivered within 10 weeks of request validation	Every two weeks

4 Vulnerable groups at risk of severe monkeypox disease: At the time of publication, this includes people with immune suppression (such as those on immunosuppressive therapy or living with poorly controlled HIV), people who are pregnant, and children.

WHO milestones

C1| Emergency coordination

Strengthen emergency operations and foster coordination between Member States and key stakeholders for responsive public health action and adaptive key health services

Pillar	Milestone	Reporting source
Leadership, coordination, planning, financing, and monitoring	**Milestone 1.1:** Multi-sectoral, multi-partner coordination mechanisms convened at the global level, including IHR Emergency Committee	WHO headquarters (HQ)
	Milestone 1.2: WHO direct technical assistance at country-level in provision of surge staff, operations support and conducting field missions for Mpox	WHO regional offices (RO) and country offices (CO)
	Milestone 1.3: Testing of functional capacities identified in the pillars that are critical in the Mpox outbreak response through simulation exercises conducted at the country-level	WHO RO and CO
	Milestone 1.4: Review of the Mpox outbreak response to identify good practices, challenges and gaps, such as through intra-action review (IAR), after action review (AAR) or other equivalent review conducted at the country-level	WHO RO and CO
	Milestone 1.5: Cross-border and multi-sectoral coordination and information sharing mechanisms/platforms strengthened and tested using simulation exercises and/or reviewed through IAR, AAR or other equivalent review	WHO HQ
	Milestone 1.6: Mpox-related guidance and tools developed and disseminated	WHO HQ/Publications

C2| Collaborative surveillance

Monitor and share information to improve the collective understanding of how this outbreak is evolving, identify specific risks and inform response measures

Pillar	Milestone	Reporting source
Surveillance, epidemiological investigation, and contact tracing	**Milestone 2.1:** WHO biweekly epidemiologic updates and further improvements to data visualization dashboards publicly available	WHO HQ
	Milestone 2.2: Technical assistance and strategic support for surveillance including epidemiologic investigation and contact-tracing (e.g., technical support, webinars, missions/visits), provided to countries	WHO HQ and RO
Laboratories and diagnostics	**Milestone 2.3:** Training and capacity-building for specimen collection, handling and laboratory testing (e.g., technical support, webinars, missions/visits), provided to countries	WHO HQ and RO
	Milestone 2.4: Number of samples shipped to referral laboratories facilitated through WHO centralized mechanisms	WHO HQ/Operations Support and Logistics (OSL)
	Milestone 2.5: Guidance on laboratory and diagnostics developed and disseminated	WHO HQ/Publications

C3| Community protection

Delivery of preventive measures and empowerment of communities

Pillar	Milestone	Reporting source
Risk communication and community engagement (RCCE) and infodemic management	**Milestone 3.1:** Scientific updates to inform stakeholders and the general public, including through webinars and the WHO Information Network for Epidemics (EPI-WIN), developed and disseminated	WHO HQ/EPI-WIN and HQ/Publications
	Milestone 3.2: Risk perception and Knowledge, Attitude and Practices surveys conducted among key affected populations	WHO HQ and RO
	Milestone 3.3: Engagements with priority communities and collaboration to develop tailored RCCE products and prevent stigma	WHO HQ and RO
Points of entry (PoEs), international travel and transport, mass gatherings and population movements	**Milestone 3.4:** Information, education and communication materials on public health advice for gatherings including PoEs, developed and disseminated	WHO HQ and RO
	Milestone 3.5: Online training for event organizers developed and disseminated	WHO HQ and RO
	Milestone 3.6: Public health advice for gathering as well as public advice for international travel updated and disseminated to health authorities and event organizers via various outreach channels, such as webinars or digitals tools	WHO HQ and RO
	Milestone 3.7: Events with a potential to amplify the spread of Mpox preemptively identified through the mass gatherings database, quantitative parameters have been introduced with thresholds to better identify and facilitate proactive outreach to NFPs, national authorities and event organizers, with the aim of increasing visibility of Mpox information and resources for attendees as well as mitigating risks of Mpox spread associated with mass gatherings	WHO HQ and RO
Vaccination	**Milestone 3.8:** Guidance on Mpox vaccine implementation, including on vaccination monitoring systems, developed and disseminated to regions and countries	WHO HQ and RO
	Milestone 3.9: Report describing and analyzing global Mpox vaccine implementation developed and published, subject to data availability, quality, and sensitivity	WHO HQ

C4| Safe and scalable care

Provide safe and quality clinical care for individuals and prevent infections in health care

Pillar	Milestone	Reporting source
Case management and clinical operations	**Milestone 4.1:** Clinical management training and capacity building for healthcare workers (e.g., technical support, webinars, missions/visits) provided to countries	WHO HQ and RO/Clinical Network
	Milestone 4.2: Number of recruitments to support coordination and implementation of Mpox case/clinical management in high-priority countries	WHO RO
	Milestone 4.3: Number of Member States that are supported by WHO with antivirals through the Monitored Emergency Use of Unregistered and Investigational Interventions (MEURI) protocol	WHO HQ
Infection prevention and control (IPC)	**Milestone 4.3:** Guidelines for Mpox IPC developed and disseminated	WHO HQ and RO
	Milestone 4.4: Identified minimum disinfection concentrations and guidance provided on technique for cleaning and disinfection of surfaces, linens, and hand hygiene	WHO HQ

C5| Countermeasures and research

Improve access to effective medical health products for Mpox and drive the cross-cutting research agenda

Pillar	Milestone	Reporting source
Research and innovation	**Milestone 5.1:** Number of joint/assisted reviews for Mpox-related clinical trial applications and experimental product safety monitoring	WHO HQ
	Milestone 5.2: Research agenda and collaborative networks for Mpox developed	WHO HQ/R&D Blueprint
	Milestone 5.3: Scientific seminars conducted on safety and efficacy of medical countermeasures (e.g., vaccines and therapeutics) for Mpox	WHO HQ
	Milestone 5.4: Number of countries supported through MEURI protocol for Therapeutics	WHO HQ
Operational support and logistics	**Milestone 5.5:** Guidance for Mpox vaccine and supply chain management developed and disseminated	WHO HQ
	Milestone 5.6: Number of supply chain assessments conducted	WHO HQ and RO
	Milestone 5.7: Number of Mpox-related products (supply volume) that have been requested and delivered through WHO procurement and supply mechanisms	WHO HQ/OSL

Expected information products

Below is a summary of the expected information products, that might not be limited to this list.

Product	Frequency	Audience	Level of use
WHO monitoring dashboard	Monthly	• WHO CO/RO/HQ • Ministry of Public Health (MOPH) • Partners • Donors	• Strategic • Advocacy
Monthly/Quarterly Operational Update	Monthly/ Quarterly	• WHO CO/RO/HQ • MOPH • Partners • Donors	• Operational
Emergency Committee report on the implementation of temporary recommendations	Quarterly	• WHO CO/RO/HQ	• Strategic • Advocacy
Policy tracker	Monthly	• WHO CO/RO/HQ • MOPH	• Operational • Strategic
Mapping of global use of vaccines and therapeutics	Quarterly	• WHO CO/RO/HQ • MOPH • Donors	• Operational • Strategic
Donor reports	Ad-hoc	• WHO CO/RO/HQ Donors	• Strategic • Advocacy
Situation report	Every two weeks	• WHO CO/RO/HQ	• Operational • Strategic • Advocacy

Annex I. Country-level indicators

The following is a consolidation of the methodological notes of the country-level indicators that will be reported under the Mpox SPRP.

Minimize human-to-human transmission of Mpox virus

Indicator 1.1: Number of laboratory-confirmed cases per week	
Rationale for use	Efficient testing strategies and infrastructure may help countries interrupt chains of transmission and stop the outbreak. This indicator may monitor trends and provide useful information about the course of the outbreak for epidemiologists and public health officials.
Definition of key terms	**Confirmed case:** A person with laboratory confirmed Mpox virus infection by detection of unique sequences of viral DNA by real-time polymerase chain reaction (PCR) and/or sequencing.
Measurement	
Numerator	Number of laboratory-confirmed cases
Denominator	N/A
Disaggregation	Reporting may include further disaggregation by age, sex, immunocompromised persons, in addition to the World Bank Income Status and WHO Region
Scope	All Member States
Target	0
Data collection and reporting	
Data source	WHO HQ Surveillance Pillar will consolidate the data reporting from Member States
Reporting start date	October 2022
Report frequency	Weekly

Indicator 1.2: Percentage of Member States with completeness of cumulative Mpox case reporting to WHO that is higher than 80%	
Rationale for use	A critical component of surveillance and case detection in the context of the current Mpox outbreak is to rapidly identify cases and clusters of cases to prevent onward transmission. Member states are encouraged to "Report to WHO, on a weekly basis and through channels established under the provision of the IHR, probable and confirmed cases of Mpox, including using the minimum data set contained in the WHO Case Report Form (CRF)" as per the recommendations from the "Third meeting of the International Health Regulations (2005) (IHR) Emergency Committee regarding the multi-country outbreak of Mpox, Section 2.c.ii."[5] This indicator may provide key insights into the robustness of existing surveillance systems in Member States and assist in identifying areas that may require further resource allocation for enabling case detection and surveillance.
Definition of key terms	Mpox case reporting in accordance with case report form
Measurement	
Numerator	Number of Member States with completeness of cumulative Mpox case reporting to WHO that is higher than 80%
Denominator	Total Member States
Disaggregation	Reporting may include further disaggregation by World Bank Income Status or WHO Region
Scope	All Member States
Target	100%
Data collection and reporting	
Data source	WHO HQ Surveillance Pillar will consolidate the data reporting from Member States
Reporting start date	October 2022
Report frequency	Monthly

5 https://www.who.int/news/item/01-11-2022-third-meeting-of-the-international-health-regulations-(2005)-(ihr)-emergency-committee-regarding-the-multi-country-outbreak-of-monkeypox

Indicator 1.3: Percentage of Member States with national orthopoxvirus testing capacity available	
Rationale for use	In accordance with the "Third meeting of the International Health Regulations (2005) (IHR) Emergency Committee regarding the multi-country outbreak of Mpox, Section 2.c.ii"[6] and "Second meeting of the International Health Regulations (2005) (IHR) Emergency Committee regarding the multi-country outbreak of Mpox, Section 2.c.iii" robust testing capacity enables timely and accurate confirmation of infection to support the breaking of chains of transmission and to stop further outbreaks. Therefore, it is crucial for countries to strengthen already existing laboratory capacity to facilitate Mpox virus detection either through nucleic acid amplification testing (NAAT), such as real time or conventional PCR.
Definition of key terms	N/A
Measurement	
Numerator	Number of Member States reporting PCR testing capacity (i.e., Mpox tests possible in a day; average if varied over time during the month)
Denominator	Total Member States
Disaggregation	Reporting may include further disaggregation by World Bank Income Status or WHO Region
Scope	All Member States
Target	100%
Data collection and reporting	
Data source	Implementation Survey: Mpox Surveillance Module
Reporting start date	October 2022
Report frequency	Monthly

Indicator 1.4: Percentage of Member States reporting cases that publicly share Mpox genetic sequence data	
Rationale for use	Sequencing of samples from infected humans and animals is encouraged to understand virus evolution and the clade(s) involved, especially to determine if cases represent a continuation of human-to-human transmission or new introductions, and to monitor mutations in the genome. This indicator will likely encourage member states to share genetic sequencing data through publicly accessible databases and is in keeping with the recommendations laid down in "Third meeting of the International Health Regulations (2005) (IHR) Emergency Committee regarding the multi-country outbreak of Mpox, Section 2.c.iv" and "Second meeting of the International Health Regulations (2005) (IHR) Emergency Committee regarding the multi-country outbreak of Mpox, Section 2.c.iv."[7]
Definition of key terms	**Share:** means that a Member State or institution/entity on a Member State's behalf has uploaded Mpox sequences to a publicly accessible database. **Genetic sequence data:** is the genetic composition of Mpox and its variants that has been determined by sequencing. It includes both whole genomes and partial sequences. **Publicly accessible database:** Database that is accessible to all, including the scientific community, policymakers and the general public. Publicly accessible databases may have access mechanisms, registration and authorization procedures or terms and conditions, but are not private, not limited to an institution and not restricted to a category or group of users.
Measurement	
Numerator	Number of Member States reporting cases and sharing virus sequence data on a publicly accessible database each month
Denominator	Total Member States
Disaggregation	Reporting may include further disaggregation by World Bank Income Status or WHO Region
Scope	All Member States
Target	100%
Data collection and reporting	
Data source	Implementation Survey: Mpox SPRP and Temporary Recommendations Implementation Module
Reporting start date	October 2022
Report frequency	Quarterly

6 https://www.who.int/news/item/01-11-2022-third-meeting-of-the-international-health-regulations-(2005)-(ihr)-emergency-committee-regarding-the-multi-country-outbreak-of-monkeypox
7 https://www.who.int/news/item/01-11-2022-third-meeting-of-the-international-health-regulations-(2005)-(ihr)-emergency-committee-regarding-the-multi-country-outbreak-of-monkeypox

Indicator 1.5: Percentage of Member States with capability or access to timely sequencing of Mpox	
Rationale for use	Genomic surveillance is essential to monitor virus evolution and transmission, and to identify variants of concern that may impact countermeasures. This indicator may provide insights on genomic surveillance capacities of countries dealing with Mpox outbreaks, which further dovetails to the recommendations laid down in "Third meeting of the International Health Regulations (2005) (IHR) Emergency Committee regarding the multi-country outbreak of Mpox, Section 2.c.iv" and "Second meeting of the International Health Regulations (2005) (IHR) Emergency Committee regarding the multi-country outbreak of Mpox, Section 2.c.iv."[8]
Definition of key terms	**Genomic sequencing capability:** refers to the Member State having produced at least one Mpox sequence. **Timely:** triggering the start of genomic sequencing within 7 days of sample collection. **Access:** referral for sequencing to international institutions/entities such as WHO Collaborating Centres or reference laboratories.
Measurement	
Numerator	Number of Member States with capability or access to timely sequencing of Mpox
Denominator	Total Member States
Disaggregation	Reporting may include further disaggregation by World Bank Income Status or WHO Region
Scope	All Member States
Target	100%
Data collection and reporting	
Data source	Implementation Survey: Mpox SPRP and Temporary Recommendations Implementation Module
Reporting start date	October 2022
Report frequency	Quarterly

Indicator 1.6: Percentage of Member States participating in WHO External Quality Assessment (EQA) Programme	
Rationale for use	External Quality Assurance assessments (EQAs) are used to monitor the quality of laboratory testing. WHO used existing capacity in the Global influenza laboratory network and established a new SARS-CoV-2 molecular EQA scheme in 2020 to assess and promote global testing capacity for SARS-CoV-2. All laboratories testing for SARS-CoV-2 are encouraged to enroll in a national or international recognized EQA scheme where available to assess testing quality.
Definition of key terms	EQA stands for External Quality Assessment. Laboratories performing molecular testing for Mpox are participating in EQAs to assess and monitor testing quality.
Measurement	
Numerator	Number of countries that participate in the WHO EQAP 2022
Denominator	Total Member States
Disaggregation	This indicator will be disaggregated to report: • Countries participating in WHO EQA national programme; • Countries participating in the subnational laboratory EQA programme
Scope	All Member States
Target	100%
Data collection and reporting	
Data source	The WHO/Lyon Laboratory team will consolidate available information from the Regional Laboratory Focal Points and share with the HQ SPRP M&E Team.
Reporting start date	October 2022
Report frequency	Quarterly

8 https://www.who.int/news/item/01-11-2022-third-meeting-of-the-international-health-regulations-(2005)-(ihr)-emergency-committee-regarding-the-multi-country-outbreak-of-monkeypox

Indicator 1.7: Percentage of Member States with IPC protocols, including for isolation of cases, in health care facilities in place	
Rationale for use	The "Third meeting of the International Health Regulations (2005) (IHR) Emergency Committee regarding the multi-country outbreak of Mpox, Section 2.d.ii" and "Second meeting of the International Health Regulations (2005) (IHR) Emergency Committee regarding the multi-country outbreak of Mpox, Section 2.d.ii"[9], advocates for the implementation of IPC measures, which includes environmental, engineering and administrative controls such as isolation, personal protective equipment (PPE), training to health care providers; and monitoring the implementation of the control measures. Adhering to IPC measures for the duration of the infectious period will break the chain of human-to-human transmission of the virus.
Definition of key terms	**Hospitalization:** admission to hospital for treatment **Administrative controls:** The resources the health care facility management team puts in place to facilitate the implementation of IPAC control measures. This includes, but not limited to, the establishment of sustainable IPC infrastructures and activities; clear policies on early recognition of pathogens of concern; access to prompt laboratory testing for identification of the etiologic agent; implementation of appropriate IPC measures (e.g., Standard Precautions for all patients), and appropriate clinical triage and placement of patients; provision of regular supplies; and organization of services Source: WHO. Infection prevention and control of epidemic and pandemic prone acute respiratory infections in health care. 2014 **Environmental and engineering controls:** These are measures that aim to reduce the concentration of infectious respiratory aerosols in the air and to reduce the contamination of surfaces and inanimate objects. Examples of primary engineering controls include adequate environmental ventilation and spatial separation, with a distance of at least 1 m between patients. Also, an example of an environmental control method is cleaning and disinfection of contaminated surfaces and inanimate objects. Source: WHO. Infection prevention and control of epidemic and pandemic prone acute respiratory infections in health care. 2014 **Personal protective equipment (PPE):** Specialized clothing or equipment worn to protect the health care worker or any other person from infection. These usually consist of standard precautions: gloves, mask and gown. If bloodborne or airborne infections, these will include face protection, goggles and mask or face shield, gloves, gown or coverall, head cover and rubber boots. Source: WHO. Minimum requirements for infection prevention and control programmes. 2019
Measurement	
Numerator	Number of member states responding "Yes" and currently having provisions/infrastructure for isolation of cases in healthcare facilities
Denominator	Total Member States
Disaggregation	Reporting may include further disaggregation by World Bank Income Status or WHO Region
Scope	All Member States
Target	100%
Data collection and reporting	
Data source	Implementation Survey: Mpox SPRP and Temporary Recommendations Implementation Module
Reporting start date	October 2022
Report frequency	Quarterly

9 https://www.who.int/news/item/01-11-2022-third-meeting-of-the-international-health-regulations-(2005)-(ihr)-emergency-committee-regarding-the-multi-country-outbreak-of-monkeypox

Indicator 1.8: Percentage of Member States with IPC protocols for community settings in place	
Rationale for use	According to the Third meeting of the International Health Regulations (2005) (IHR) Emergency Committee regarding the multi-country outbreak of Mpox section 2.c.xii.[10], member states should "undertake thorough risk assessments, prepare for, and rapidly respond to any case or outbreak of Mpox in congregate settings including hospitals, prisons, migrant worker residences, or other situations where population density may be high, including facilities for internally displaced persons or refugees". The implementation of appropriate IPC measures in conjunction with environmental, engineering and administrative controls and the use of PPE play a crucial role in mitigating and controlling transmission of Mpox in community settings.
Definition of key terms	**Administrative Controls:** The resources the health care facility management team puts in place to facilitate the implementation of IPAC control measures. This includes, but not limited to, the establishment of sustainable IPC infrastructures and activities; clear policies on early recognition of pathogens of concern; access to prompt laboratory testing for identification of the etiologic agent; implementation of appropriate IPC measures (e.g. Standard Precautions for all patients), and appropriate clinical triage and placement of patients; provision of regular supplies; and organization of services Source: WHO. Infection prevention and control of epidemic and pandemic prone acute respiratory infections in health care. 2014 **Environmental and engineering controls:** These are measures that aim to reduce the concentration of infectious respiratory aerosols in the air and to reduce the contamination of surfaces and inanimate objects. Examples of primary engineering controls include adequate environmental ventilation and spatial separation, with a distance of at least 1 m between patients. Also, an example of an environmental control method is cleaning and disinfection of contaminated surfaces and inanimate objects. Source: WHO. Infection prevention and control of epidemic and pandemic prone acute respiratory infections in health care. 2014 **Personal protective equipment (PPE):** Specialized clothing or equipment worn to protect the health care worker or any other person from infection. These usually consist of standard precautions: gloves, mask and gown. If bloodborne or airborne infections, these will include face protection, goggles and mask or face shield, gloves, gown or coverall, head cover and rubber boots. Source: WHO. Minimum requirements for infection prevention and control programmes. 2019
Measurement	
Numerator	Number of member states responding "Yes" and having with IPC protocols in place for community settings
Denominator	Total Member States
Disaggregation	Reporting may include further disaggregation by World Bank Income Status or WHO Region
Scope	All Member States
Target	100%
Data collection and reporting	
Data source	October 2022
Reporting start date	Quarterly
Report frequency	Quarterly

10 https://www.who.int/news/item/01-11-2022-third-meeting-of-the-international-health-regulations-(2005)-(ihr)-emergency-committee-regarding-the-multi-country-outbreak-of-monkeypox

Protect vulnerable groups at risk of severe Mpox disease

Indicator 2.1: Percentage of Member States with access to second or third generation Mpox vaccine	
Rationale for use	A key priority of the concerted global response for Mpox is to prevent the chain of human-to-human transmission as noted in the "Second meeting of the International Health Regulations (2005) (IHR) Emergency Committee regarding the multi-country outbreak of Mpox."[11] Targeted and judicious use of vaccines can support this response. Prior evidence suggests a protective effect conferred by Mpox/smallpox vaccines. To curb transmission and possibly reduce disease burden, countries should consider implementing strategies for vaccinating high risk groups. This includes specific strategies to reach gay, bisexual and other men who have sex with men and persons who have multiple sex partners, including sex workers.
Definition of key terms	**High-risk groups for post-exposure vaccination:** contacts of cases, ideally within four days of first exposure (and up to 14 days in the absence of symptoms). **High risk groups for pre-exposure vaccination:** health workers at high risk of exposure, laboratory personnel working with orthopoxviruses, clinical laboratory personnel performing diagnostic testing for Mpox and outbreak response team members designated by national public health authorities. **Second generation vaccines:** Second-generation smallpox vaccines use the same vaccinia virus vaccine strains employed for manufacture of first-generation vaccines or clonal virus variants plaque-purified from traditional vaccine stocks and manufactured on defined cell lines. **Third generation vaccines:** The term third-generation refers to more attenuated smallpox vaccine strains specifically developed as safer vaccines towards (LC16) or after (MVA-BN) the end of the eradication phase by further passage in cell culture or animals.
Measurement	
Numerator	Number of countries reporting availability of full doses of the following vaccines: 1) MVA-BN (third generation) 2) LC16 (third generation) 3) ACAM2000 (second generation)
Denominator	Total Member States
Disaggregation	Reporting may include further disaggregation by World Bank Income Status or WHO Region
Scope	All Member States
Target	100%
Data collection and reporting	
Data source	Implementation Survey: Mpox Access & Allocation Module
Reporting start date	October 2022
Report frequency	Quarterly
Limitations	There is significant uncertainty about the efficacy as well as real world effectiveness of vaccination in the context of current Mpox outbreak. Duration of protection conferred by vaccines as well as correlates of protection are yet to be evaluated.

11 https://www.who.int/news/item/01-11-2022-third-meeting-of-the-international-health-regulations-(2005)-(ihr)-emergency-committee-regarding-the-multi-country-outbreak-of-monkeypox

Indicator 2.2: Percentage of Member States with pre- and/or post-exposure vaccine recommendations in place	
Rationale for use	According to the "Second meeting of the International Health Regulations (2005) (IHR) Emergency Committee regarding the multi-country outbreak of Mpox, Section 2.c.viii and 2.c.ix", vaccination against Mpox as post-exposure preventive vaccination (PEPV) may be considered for individuals in special population groups, i.e. during pregnancy, for children, or for persons with immune suppression, including people living with HIV (PLWH), following a careful evaluation of risks and benefits. Vaccination against Mpox as a primary preventive (pre-exposure) vaccination (PPV) measure is not currently recommended for these population groups solely on the basis of their higher risk of severe disease. For persons in these groups who may be at increased risk of exposure, PPV may be warranted. The choice and timing of vaccination must be considered in light of a detailed joint risk-benefit analysis and shared clinical decision-making with respect to the person's individual circumstances, in accordance with the risk criteria and implementation and monitoring considerations. Also noted in: "Third meeting of the International Health Regulations (2005) (IHR) Emergency Committee regarding the multi-country outbreak of Mpox, Section 2.a.i and 2.a.iii)."[12]
Definition of key terms	**Primary preventive (pre-exposure) vaccination (PPV):** PPV is recommended for high risk groups including: individuals but not limited to those who self-identify as gay or bisexual or other men who have sex with men or other individuals with multiple sexual partners; sex workers; and health workers at high risk of exposure, laboratory personnel working with orthopoxviruses; clinical laboratory personnel performing diagnostic testing for Mpox; and outbreak response team members (as designated by national public health authorities). For close contacts of cases at high or medium risk of exposure, post-exposure preventive vaccination (PEPV) is recommended with an appropriate second- or third-generation vaccine, ideally within four days of first exposure (and up to 14 days in the absence of symptoms), to prevent onset of disease or to attenuate its severity.
Measurement	
Numerator	Number of countries reporting a Mpox national immunization strategy or recommendation that includes post-exposure or pre-exposure preventive vaccination (PEPV) against Mpox
Denominator	Total Member States
Disaggregation	Reporting may include further disaggregation by World Bank Income Status or WHO Region
Scope	All Member States
Target	100%
Data collection and reporting	
Data source	Implementation Survey: Mpox Access & Allocation Module
Reporting start date	October 2022
Report frequency	Quarterly

Indicator 2.3: Percentage of Member States with a system to monitor vaccine doses administered available	
Rationale for use	Vaccine uptake plays a critical role in curbing the spread of the disease and increasing and maintaining vaccination uptake is vital for vaccines to achieve their success. This indicator may provide key insights to understanding if Mpox vaccines are easily accessible and available to the public, and if the vaccines are acceptable by the community.
Definition of key terms	N/A
Measurement	
Numerator	Number of countries reporting the total number of doses of Mpox vaccine products that have been administered in the country from May 2022 to the present date (include full or fractional doses)
Denominator	Total Member States
Disaggregation	Reporting may include further disaggregation by World Bank Income Status or WHO Region
Scope	All Member States
Target	100%
Data collection and reporting	
Data source	Implementation Survey: Mpox Outbreak Response Module
Reporting start date	October 2022
Report frequency	Monthly

12 https://www.who.int/news/item/01-11-2022-third-meeting-of-the-international-health-regulations-(2005)-(ihr)-emergency-committee-regarding-the-multi-country-outbreak-of-monkeypox

Indicator 2.4: Percentage of Member States with a surveillance system to monitor adverse events following immunization in place	
Rationale for use	Identifying and responding to serious adverse events following immunization (AEFI) after vaccination requires the establishment of a surveillance system for serious AEFI (or the enhancement of an existing surveillance system within a country). Such a system reinforces the safe use of all vaccines in the country while also helping to maintain public confidence in vaccination. This is a key component of quality vaccination and should be done systematically. A surveillance system for serious AEFI following vaccination should be operated in collaboration with all stakeholders, including sharing information and timely updating of the safety profiles of vaccines.
Definition of key terms	**AEFI:** any untoward medical occurrence which follows immunization and which does not necessarily have a causal relationship with the use of the vaccine. The adverse event may be any unfavorable or unintended sign, an abnormal laboratory finding, a symptom or a disease. AEFI are rated by intensity of the event (that is: mild, moderate, severe); the event itself may be of minor medical significance.
Measurement	
Numerator	Number of countries with a surveillance/reporting system in place to monitor adverse events following vaccine administration
Denominator	Total Member States
Disaggregation	Reporting may include further disaggregation by World Bank Income Status or WHO Region
Scope	All Member States
Target	100%
Data collection and reporting	
Data source	Implementation Survey: Mpox Access & Allocation Module
Reporting start date	October 2022
Report frequency	Quarterly
Limitations	Safety data of currently licensed Mpox vaccines are evolving and reporting requirements may need modifications based on the data from AEFI surveillance and ongoing safety studies

Indicator 2.5: Percentage of Member States with access to Mpox antivirals for treatment of severe cases available	
Rationale for use	Prevention and management of Mpox is similar to other orthopoxvirus infections. In cases of severe disease, the use of antivirals have proven to be effective. Therefore, this indicator can help identify if countries have capacity to provide antivirals in cases of severe disease in high risk and vulnerable groups like immunocompromised patients and is aligned with "Third meeting of the International Health Regulations (2005) (IHR) Emergency Committee regarding the multi-country outbreak of Mpox, Section 2.e.ii" and "Second meeting of the International Health Regulations (2005) (IHR) Emergency Committee regarding the multi-country outbreak of Mpox, Section 2.e.ii."[13]
Definition of key terms	**Tecovirimat: i**s licensed by the European Medicines Agency (EMA) for the treatment of smallpox, Mpox, cowpox and complications from immunization with vaccinia and by the United States Food and Drug Administration (FDA) and Health Canada for small pox. **Brincidofovir:** is approved by the EMA and FDA for treatment of smallpox and has been shown to have antiviral activity against double-stranded DNA viruses, including pox viruses. **Cidofoviris:** approved by the FDA for the treatment of cytomegalovirus. It inhibits replication of Mpox virus by inhibiting DNA polymerase and is administered intravenously. **NIOCH-14:** is an analogue of tecovirimat with comparable activity against orthopoxviruses.
Measurement	
Numerator	Number of countries reporting availability of Tecrovirimat for Mpox cases in the country
Denominator	Total Member States
Disaggregation	Reporting may include further disaggregation by World Bank Income Status or WHO Region
Scope	All Member States
Target	100%
Data collection and reporting	
Data source	Implementation Survey: Mpox Outbreak Response Module
Reporting start date	October 2022
Report frequency	Monthly

Indicator 2.6: Percentage of Member States with treatment protocol for management of hospitalized cases in place	
Rationale for use	Member states are advised to establish, update, and implement clinical care protocols for management of patients with severe symptoms, acute complications and long-term monitoring of sequelae. Effective treatment protocols may assist in streamlining triage efforts in high burden settings with limited resources and help in initiating timely interventions, which can further reduce the plausibility of acute complications and/or long term sequelae in patients.
Definition of key terms	**Hospitalization:** admission to hospital for treatment
Measurement	
Numerator	Number of countries with established 1) Clinical care pathway 2) Clinical care protocol for severe disease and acute complications and 3) Clinical care protocol for mid-or-long term sequelae of the disease
Denominator	Total Member States
Disaggregation	Reporting may include further disaggregation by World Bank Income Status or WHO Region
Scope	All Member States
Target	100%
Data collection and reporting	
Data source	Implementation Survey: Mpox SPRP and Temporary Recommendations Implementation Module
Reporting start date	October 2022
Report frequency	Quarterly

13 https://www.who.int/news/item/01-11-2022-third-meeting-of-the-international-health-regulations-(2005)-(ihr)-emergency-committee-regarding-the-multi-country-outbreak-of-monkeypox

Indicator 2.7: Percentage of Member States with Surveillancefor health care-associated infections (HAI), including patients and occupational health worker exposures and infections, in place	
Rationale for use	Hospital acquired infections (HAI) for patients and health care workers are key indicators that IPC standards have not been followed. The implementation of surveillance programs to monitor HAI cases, in conjunction with environmental, engineering and administrative controls, and the use of PPE play a crucial role in mitigating and controlling transmission of MPOX in health care settings. Surveillance programs is in accordance with "Third meeting of the International Health Regulations (2005) (IHR) Emergency Committee regarding the multi-country outbreak of Mpox, Section 2.d.ii" and "Second meeting of the International Health Regulations (2005) (IHR) Emergency Committee regarding the multi-country outbreak of Mpox, Section 2.d.ii."[14]
Definition of key terms	**Hospitalization:** admission to hospital for treatment **Administrative controls:** The resources the health care facility management team puts in place to facilitate the implementation of IPAC control measures. This includes, but not limited to, the establishment of sustainable IPC infrastructures and activities; clear policies on early recognition of pathogens of concern; access to prompt laboratory testing for identification of the etiologic agent; implementation of appropriate IPC measures (e.g., Standard Precautions for all patients), and appropriate clinical triage and placement of patients; provision of regular supplies; and organization of services Source: WHO. Infection prevention and control of epidemic and pandemic prone acute respiratory infections in health care. 2014 **Environmental and engineering controls:** These are measures that aim to reduce the concentration of infectious respiratory aerosols in the air and to reduce the contamination of surfaces and inanimate objects. Examples of primary engineering controls include adequate environmental ventilation and spatial separation, with a distance of at least 1 m between patients. Also, an example of an environmental control method is cleaning and disinfection of contaminated surfaces and inanimate objects. Source: WHO. Infection prevention and control of epidemic and pandemic prone acute respiratory infections in health care. 2014 **Personal protective equipment (PPE):** Specialized clothing or equipment worn to protect the health care worker or any other person from infection. These usually consist of standard precautions: gloves, mask and gown. If bloodborne or airborne infections, these will include face protection, goggles and mask or face shield, gloves, gown or coverall, head cover and rubber boots. Source: WHO. Minimum requirements for infection prevention and control programmes. 2019
Measurement	
Numerator	Number of member states responding "Yes" and currently equipped with surveillance for health care-associated infections including patients and occupational health worker exposures and nosocomial/healthcare associated infections
Denominator	Total Member States
Disaggregation	Reporting may include further disaggregation by World Bank Income Status or WHO Region
Scope	All Member States
Target	100%
Data collection and reporting	
Data source	Implementation Survey: Mpox SPRP and Temporary Recommendations Implementation Module
Reporting start date	October 2022
Report frequency	Quarterly

14 https://www.who.int/news/item/01-11-2022-third-meeting-of-the-international-health-regulations-(2005)-(ihr)-emergency-committee-regarding-the-multi-country-outbreak-of-monkeypox

Minimize zoonotic transmission of Mpox virus

Indicator 3.1: Percentage of Member States with established/activated One Health coordination mechanism or other multisectoral coordination mechanism for understanding, monitoring, and managing the risk of animal-to-human and human-to-animal transmission	
Rationale for use	Emerging infectious disease outbreaks like Mpox have highlighted that collective capacities with the One Health approach are imperative to strengthen existing health systems and promote healthy ecosystems. Effective One Health coordination may also play a critical role in monitoring, preventing, and managing future infections as there is always a likelihood of transmission between animals and human, zoonotic outbreaks, antimicrobial resistance, and other hazards. According to the temporary recommendations by the Second meeting of the IHR 2005 Emergency Committee regarding the multicounty outbreak of Mpox, Group 3, Section 3.a, a concerted effort between the public health, veterinary and wildlife authorities will be vital in understanding the nature and course of the outbreak and managing the risks of animal to human and human to animal transmission in different settings. "Third meeting of the International Health Regulations (2005) (IHR) Emergency Committee regarding the multi-country outbreak of Mpox, Section 3.a."
Definition of key terms	One Health – 'One Health' is an integrated, unifying approach to balance and optimize the health of people, animals and the environment. It is particularly important to prevent, predict, detect, and respond to global health threats such as the COVID-19 pandemic. The approach mobilizes multiple sectors, disciplines and communities at varying levels of society to work together. This way, new and better ideas are developed that address root causes and create long-term, sustainable solutions. One Health involves the public health, veterinary, public health and environmental sectors. The One Health approach is particularly relevant for food and water safety, nutrition, the control of zoonoses (diseases that can spread between animals and humans, such as flu, rabies and Rift Valley fever), pollution management, and combatting antimicrobial resistance (the emergence of microbes that are resistant to antibiotic therapy).
Measurement	
Numerator	Total number of countries responding 1-yes to Question T2b "Has the State Party established or activated a collaborative One Health coordination or other mechanism between public health, veterinary, and wildlife authorities for understanding, monitoring, and managing the risk of animal-to-human and human-to-animal transmission?"
Denominator	All Member States with reported Mpox cases
Disaggregation	By income groups and by WHO regions
Scope	All Member States
Target	100%
Data collection and reporting	
Data source	Implementation Survey: Mpox SPRP and Temporary Recommendations Implementation Module
Reporting start date	October 2022
Report frequency	Quarterly

Indicator 3.2: Percentage of Member States that have undertaken detailed case investigations and studies to characterize transmission patterns, including suspected or documented spillovers from and spillback to animals	
Rationale for use	Member states reporting Mpox outbreaks are recommended to undertake detailed case investigation and studies to better understand the drivers of emergence, spillover and spread of Mpox in the community or region. Detailed outbreak investigation in cases of established or suspected spillover and/or spillback may facilitate mobilizing and prioritizing evidence-based upstream interventions for prevention of further animal to human or human to animal transmission. "Third meeting of the International Health Regulations (2005) (IHR) Emergency Committee regarding the multi-country outbreak of Mpox, Section 3.b."
Definition of key terms	"Spillover" can be defined as the "cross-species transmission of a parasite into a host population not previously infected" (Wells K, Clark NJ. Host specificity in variable environments. Trends Parasitol. 2019;35:452–465). The transmission of a pathogen from humans to wildlife (reverse zoonosis), by direct contact between species or mediated by vectors, can be called "spillback" (Olival KJ, Hosseini PR, Zambrana-Torrelio C, Ross N, Bogich TL, Daszak P. Host and viral traits predict zoonotic spillover from mammals. Nature. 2017;546:646–650).
Measurement	
Numerator	Total number of countries responding 1-yes to Question T2c "Has the State Party undertaken detailed case investigations and studies to characterize transmission patterns, including suspected or documented spillovers from, and spillback, to animals?"
Denominator	Countries that are enzootic or where spillover and/or spillback has occurred or is suspected
Disaggregation	By WHO regions
Scope	All Member States
Target	100%
Data collection and reporting	
Data source	Implementation Survey: Mpox SPRP and Temporary Recommendations Implementation Module
Reporting start date	October 2022
Report frequency	Quarterly

Indicator 3.3: Percentage of countries that have included actions to minimize opportunities for animal-to-human and/or human-to-animal transmission in their national strategy	
Rationale for use	Recent infectious disease outbreaks have highlighted the critical need to establish effective mechanisms for coordination and collaboration between the veterinary, public health, and environmental health sectors before new threats emerge by bridging the gaps between these different sectors to tackle ongoing zoonotic diseases of greatest concern. This indicator may provide further insights regarding multi-sectoral collaboration to improve surveillance and data sharing for zoonotic diseases and joint outbreak response capacities in the human and animal health sectors.
Definition of key terms	
Measurement	
Numerator	Total number of countries responding 1-yes to Question T1e " Does the national strategy (e.g., plans, policies, protocols), focus on actions to minimize opportunities for animal-to-human and/or human-to-animal transmission?"
Denominator	Denominator: Countries that are enzootic or where spillover and/or spillback has occurred or is suspected
Disaggregation	By WHO regions
Scope	All Member States
Target	100%
Data collection and reporting	
Data source	Implementation Survey: Mpox SPRP and Temporary Recommendations Implementation Module
Reporting start date	October 2022
Report frequency	Quarterly

Complementary indicators

Indicator 4.1: Percentage of supplies requested (diagnostics) through WHO supply mechanisms that are delivered within 10 weeks of request validation	
Rationale for use	In order to ensure timeliness of the WHO Supply Portal, WHO HQ seeks to measure key products and track the end-to-end lead time, beginning from the supply order validation by the country supply coordinator to the delivery of the supply orders (diagnostics) in-country. Further detailed analysis of the entire end to end lead time from order validation to supply delivery (diagnostics) processes will be analyzed by the WHO HQ/OSL team to identify and address bottlenecks as well as improve performance of the Supply Portal.
Definition of key terms	**Request validation:** Approval of the country supply coordinator and endorsed by WHO HQ/OSL **End-to-end lead time:** Refers to the time period from order validation to country delivery **Country delivery:** The delivery of the request to the consignee in-country
Measurement	
Numerator	Number of supplies requested delivered within 10 weeks of order validation
Denominator	Number of supplies requested total that were delivered
Disaggregation	Reporting may include further disaggregation by World Bank Income Status or WHO Region
Scope	This indicator focuses on orders placed via WHO Supply Portal
Target	85%
Data collection and reporting	
Data source	WHO HQ/OSL will source from existing databases managing the request status indication and share with WHO HQ IMST
Reporting start date	October 2022
Report frequency	Every two weeks

Annex II. Consolidated data collection tool

TABLE 1A: Mpox Surveillance Module
(NB: indicators (S) are collected only ONCE, or if there is a change in the response strategy)

Domain	#	Indicator	Coding
Surveillance	S1a.	Type of case definition	Select one 0 – No case definition 1 – WHO case definition 2 – ECDC case definition 3 – Nation case definition 4 – Other
	S1b.	Case definition text	If S1a. = 0 -> NA Else = Text
	S2.	Case isolation	Select one 0 – No measures 1 – Recommendation to limit movement 2 – Isolation at home 3 – Isolation at a hospital or managed facility
	S3a.	Type of contact definition	Select one 0 – No contact definition 1 – WHO contact definition 2 – ECDC contact definition 3 – National contact definition 4 – Other
	S3b.	Contact definition text	If S3a. = 0 -> NA Else = Text
	S3c.	Classification of contacts into risk levels	Select one 0 – no 1 – yes 2 – unknown
	S3d.	How are the categories/type of exposure defined?	If S3c. = 1 -> select one 0 – According to WHO criteria 1 – Other criteria (specify)
	S3e.	Contact quarantine	Select all that apply 0 – No measures 1 – Recommendation to limit movement 2 – Quarantine for high-risk contacts 3 – Quarantine for medium risk contacts 4 – Quarantine for low-risk contacts 5 – Quarantine for all contacts
PCR Testing	S4a.	Does the country have a national testing strategy?	Select one 0 – no 1 – yes 2 – unknown
	S4b.	PCR testing criteria text	If S4a. = 1 -> Text (specify)
Vaccines	S5a.	Does the country have a Mpox vaccination strategy?	Select one 0 – no 1 – yes 2 – unknown
	S5b.	Is the national regulatory system functional in the country to evaluate and authorize the local use of the currently available Mpox vaccines?	Select one 0 – no 1 – yes 2 – unknown

TABLE 1B: Mpox Outbreak Response Module (NB: indicators (R) for MONTHLY monitoring over time)

Domain	#	Indicator	Coding
PCR testing	R1.	PCR testing capacity (i.e., mpox tests possible in a day; average if varied over time during the month)	Number
	R2.	Proportion of suspected cases tested in the past month (for countries that have no capacity to test all suspected cases)	%
	R3a.	Total mpox PCR tests performed in the past month (sum of positives and negatives)	Number
	R3b.	Total mpox PCR positive tests in the past month	Number
Vaccines	R4a.	Availability of mpox vaccines in the country	Select one 0 – no 1 – yes 2 – unknown
	R4b.	Available vaccine doses in the country	If R4a. = 1 -> Number (specify)
	R4c.	Name/s of the mpox vaccine/s used	If R4a. = 1 -> select all that apply ACAM2000 Aventis Pasteur smallpox vaccine Imvanex Imvamune Jynneos LC16m8 Other (specify) Unknown
	R5a.	Doses administered in the past month	Number
	R5b.	Doses of PRE-exposure vaccination doses given in the past month	Number
	R5c.	Doses of POST-exposure vaccination doses given in the past month	Number
Treatment	R6.	Availability of Tecrovirimat for mpox cases in the country	Select one 0 – no 1 – yes 2 – unknown

TABLE 2A: Mpox SPRP and Temporary Recommendations Implementation Module (NB: indicators (T) collected QUARTERLY/semi-annually)

Domain	#	Indicator	Coding
National Planning for Readiness and Response for Mpox	T1a.	Does the State Party have a national strategy (e.g., plans, policies, protocols), to guide its readiness and/or response actions for the outbreak of Mpox?	Select one 0 – no 1 – yes
	T1b.	Does the national strategy (e.g., plans, policies, protocols), recognize 'stopping human-to-human transmission as the main strategic objective'?	If T1a. = 1 -> select one 0 – no 1 – yes
	T1c.	Does the national strategy (e.g., plans, policies, protocols), focus on actions targeting communities at high risk of exposure to Mpox in your local context? (eg, individuals who have sex with multiple partners; individuals who handle animals who may be infected)	If T1a. = 1 -> select one 0 – no 1 – yes
	T1d.	Does the national strategy (e.g., plans, policies, protocols), focus on actions to protect vulnerable groups? (eg, immunosuppressed individuals, children, people who are pregnant)	If T1a. = 1 -> select one 0 – no 1 – yes
	T1e.	Does the national strategy (e.g., plans, policies, protocols), focus on actions to minimize opportunities for animal-to-human and/or human-to-animal transmission?	If T1a. = 1 -> select one 0 – no 1 – yes
	T1f.	Please indicate whether the following selected readiness and response domains are encompassed in the national strategy (e.g., plans, policies, protocols) • National Coordination mechanism for readiness and/or response actions • Risk communication and community engagement • Surveillance and epidemiology • Laboratory diagnostics • Points of Entry, international travel and transport, mass gatherings and population movements • Clinical management and infection prevention and control (IPC)	If T1a. = 1 -> Tick all that apply 0 – no 1 – yes
	T1g.	Are the following elements encompassed? • Multi-sectoral nature of the coordination mechanism • Coordination mechanism underpinned by an engagement and accountability framework between the Government and affected communities	If T1fi. = 1 -> Tick all that apply 0 – no 1 – yes
	T1h.	Are the following elements encompassed? • Interventions targeted to communities likely to be affected • Social listening • Addressing infodemics and misinformation • Interventions to avoid stigmatization and discrimination • Interventions focusing on settings and venues where high-risk activities (e.g., intimate encounters) take place, including large and smaller scale events • Vaccine demand management	If T1fii. = 1 -> Tick all that apply 0 – no 1 – yes
	T1i.	Are the following elements encompassed? • Characterization of modes of transmission (i.e., human-to-human and/or zoonotic transmission) • Surveillance in animal populations Are the following elements encompassed? • Genetic sequencing capability • Procurement and logistics related to diagnostics	If T1fiii. = 1 -> Tick all that apply 0 – no 1 – yes

	T1j.	Are the following elements encompassed? • Characterization of modes of transmission (i.e., human-to-human and/or zoonotic transmission) • Surveillance in animal populations Are the following elements encompassed? • Genetic sequencing capability • Procurement and logistics related to diagnostics	If T1fiv. = 1 -> Tick all that apply 0 – no 1 – yes
	T1k.	Are the following elements encompassed? • Advice for incoming and outgoing international travelers (e.g., cases and contacts advised not to undertake any international travel) • International contact tracing • Dissemination of information to stakeholders in the transport sector, including at Points of Entry	If T1fv. = 1 -> Tick all that apply 0 – no 1 – yes
	T1l.	Are the following elements encompassed? • Isolation of cases in health care facilities • Isolation of cases at home • IPC protocols for health care facilities • IPC protocols for community settings • Procurement of and logistics related to Personal Protective Equipment (PPE) • Surveillance for health care-associated infections (HAI), including occupational health worker exposures and infections • Clinical care pathway • Clinical care protocol for uncomplicated disease • Clinical care protocol for severe disease and acute complications • Clinical care protocol for mid-or long-term sequelae of the disease	If T1fvi. = 1 -> Tick all that apply 0 – no 1 – yes
Zoonotic transmission	T2a.	Does the State Party have known or suspected zoonotic transmission of Mpox (including where it is known to occur or has been reported in the past, where Mpox has been documented in any animal species, or where infection of animal species in country may be suspected)?	Select one 0 – no 1 – yes
	T2b.	Has the State Party established or activated a collaborative One Health coordination or other multisectoral coordination mechanism between public health, veterinary, and wildlife authorities for understanding, monitoring, and managing the risk of animal-to-human and human-to-animal transmission?	If T2a. = 1 -> select one 0 – no 1 – yes
	T2c.	Has the State Party undertaken detailed case investigations and studies to characterize transmission patterns, including suspected or documented spillovers from, and spillback, to animals?	If T2a. = 1 -> select one 0 – no 1 – yes

Manufacturing capacities	T3a.	Does the State Party have manufacturing capacity for Mpox diagnostics?	Select one 0 – no 1 – yes
	T3b.	Has the State Party raised the production of Mpox diagnostics?	If T3a. = 1 -> select one 0 – no 1 – yes
	T4a.	Does the State Party have manufacturing capacity for antivirals for the treatment of Mpox?	Select one 0 – no 1 – yes
	T4b.	Has the State Party raised the production of antivirals for the treatment of Mpox?	If T4a. = 1 -> select one 0 – no 1 – yes
	T5a.	Does the State Party have manufacturing capacity for Mpox vaccines?	Select one 0 – no 1 – yes
	T5b.	Has the State Party raised the production of Mpox vaccines?	If T5a. = 1 -> select one 0 – no 1 – yes
Observations and suggestions	T6	Please share any observations and/or suggestions you have regarding the survey, and in particular about the Temporary Recommendations	Text

TABLE 2B: Mpox Access & Allocation Module (NB: indicators (M) collected quarterly/semi-annually)

Domain	#	Indicator	Coding
Therapeutics	M1a.	Are specific antiviral therapeutics or immune globulins available in the country?	Select one 0 – no 1 – yes 2 – uncertain
	M1b.	Which therapeutics are available? • Immunoglobulin • Vaccinia Immune Globulin • Brincidofovir (Tembexa™) • Tecovirimat (TPOXX™) • Other antivirals (specify)	If M1a. = 1 -> Tick all that apply, and if possible, add number of available treatment courses* *If M2bi/ii/iii/iv/v. = ticked, specify: number of available treatment courses
	M2a.	How many courses of specific antiviral treatment are expected to be administered in the country over the next **6 months?**	Number, type "0" if none are planned
	M2b.	How many courses of specific antiviral treatment are expected to be administered in the country over the next **12 months?**	Number, type "0" if none are planned
	M3.	Is the administration of antivirals part of a research/observational study framework?	Select one 0 – no 1 – yes 2 – uncertain
	M4.	Does the country have a surveillance/reporting system in place to monitor adverse events following treatment of Mpox?	Select one 0 – no 1 – yes 2 – uncertain

Vaccines	M5a.	Does the country have a supply or reserves of smallpox/Mpox vaccines products available?	Select one 0 – no 1 – yes 2 – uncertain
	M5b.	Which vaccine products are available? • MVA-BN (third generation) • LC16 (third generation) • ACAM2000 (second generation) • Other (specify)	If M5a. = 1 -> Tick all that apply, and if possible, add the number of available full vaccine doses* *If M5bi/ii/iii/iv. = ticked, specify: number of available full vaccine doses
	M6.	Does the country wish to keep the information about the national supply or reserves of Mpox vaccine confidential for WHO only?	Select one 0 – no 1 – yes 2 – uncertain
	M7a.	Has the country authorized one or more Mpox vaccine products for use?	Select one 0 – no 1 – yes
	M7b.	Which vaccine products have been approved? • MVA-BN (third generation) • LC16 (third generation) • ACAM2000 (second generation) • Other (specify)	If M7a. = 1 -> Tick all that apply 0 – no 1 – yes
	M8a.	Does the country have Mpox national immunization strategies or recommendations?	Select one 0 – no 1 – yes* 2 – uncertain *If yes -> please upload file
	M8b.	Does the Mpox national immunization strategy or recommendation include primary preventive vaccination (PPV) against Mpox?	Select one 0 – no 1 – yes 2 – uncertain
	M8c.	What population groups are eligible for PPV?	If M8b. = 1 -> Tick all that apply 1 – Individuals who self-identify as gay/bisexual or other men who have sex with men, or other individuals with multiple sexual partners 2 – Health workers at high risk of exposure 3 – Laboratory personnel working with orthopoxviruses 4 – Clinical laboratory personnel performing diagnotstic testing for Mpox 5 – Outbreak response team members 6 – Other (specify)
	M8d.	Does the Mpox national immunization strategy or recommendation include post-exposure preventive vaccination (PEPV) against Mpox?	Select one 0 – no 1 – yes 2 – uncertain
	M8e.	Please elaborate on what population groups are eligible for PEPV	If M8d. = 1 -> Text
	M9.	Is the administration of Mpox vaccine products part of a research/observational study framework?	Select one 0 – no 1 – yes 2 – uncertain
	M10.	Does the country have a surveillance system in place to monitor adverse events following Mpox vaccine administration?	Select one 0 – no 1 – yes 2 – uncertain

	M11.	Does the country have an Adverse Events Following Immunization (AEFI) Committee in place to conduct causality assessments following Mpox vaccine administration?	Select one 0 – no 1 – yes 2 – uncertain
	M12.	Who covers the cost of vaccination?	Tick all that apply 1 – Individual 2 – Employer 3 – Government 4 – Other (specify)
Allocation	M13.	What is the estimated size of the population eligible for vaccination?	Number, type "0" if none
	M14.	How many **doses** of Mpox vaccine products have been administered in the country from May 2022 to the present date? (include full or fractional doses)	Number, type "0" if none
	M15.	How many **individuals** have received **at least one dose** of a Mpox vaccine product (include full or fractional dose) in the country, from May 2022 to the present date?	Number, type "0" if none
	M16.	How many **individuals** have received **a complete series** of a Mpox vaccine product in the country, from May 2022 to the present date?	Number, type "0" if none
	M17a.	How many full doses of Mpox vaccine products as recommended by the manufacturer are planned to be **procured** by the country over the next **6 months?**	Number, type "0" if none
	M17b.	How many full doses of Mpox vaccine products as recommended by the manufacturer are planned to be **procured** by the country over the next **12 months?**	Number, type "0" if none
	M18a.	How many doses (full or fractional) of Mpox vaccine are planned to be **administered** in the country over the next **6 months?**	Number, type "0" if none
	M18b.	How many doses (full or fractional) of Mpox vaccine are planned to be **administered** in the country over the next **12 months?**	Number, type "0" if none

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