AfricaCDC
Centres for Disease Control and Prevention

World Health Organization
African Region

AFRICA CONTINENTAL MPOX SURVEILLANCE STRATEGY

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Incident Management Support Team

The Incident Management Support Team (IMST) is Africa's continental effort co-led by Africa CDC and WHO, that collaborates with ministries of Health, regional partners, and global stakeholders to expand vaccination efforts, enhance diagnostic access, and strengthen health system resilience.

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Abbreviations

4W	Who–What–Where–When (partner mapping)
AFRO	WHO Regional Office for Africa
API	Application Programming Interface
API/HL7	API and Health Level Seven standards
CBS	Community-Based Surveillance
CBS/EBS	Communityand Event-Based Surveillance
CDC	U.S. Centers for Disease Control and Prevention
CEPI	Coalition for Epidemic Preparedness Innovations
CFR	Case Fatality Rate
CIF	Case Investigation Form
CITES	Convention on International Trade in Endangered Species
CRF	Case Report Form
CSR	Corporate Social Responsibility
DHIS2	District Health Information Software v2
DQA	Data Quality Assessment
DRC	Democratic Republic of the Congo
EBS	Event-Based Surveillance
EPR	Emergency Preparedness and Response
EPRU	Emergency Preparedness and Response Unit
EPHI	Ethiopian Public Health Institute
EWARS	Early Warning, Alert and Response System
FAO	Food and Agriculture Organization of the UN
GIS	Geographic Information System
HCW	Health Care Worker
HIS	Health Information System
HL7	Health Level Seven
HMIS	Health Management Information System
IAR	Intra-Action Review
IDSR	Integrated Disease Surveillance and Response
IFRC	International Federation of Red Cross and Red Crescent Societies
IHR (2005)	International Health Regulations (2005)
IM	Incident Management (System)
IMS	Incident Management System
IMST	Incident Management Support Team

KPI / KPIs	Key Performance Indicator(s)
KNPHI	Kenya National Public Health Institute
LIMS	Laboratory Information Management System
LIS	Laboratory Information System
LMIS	Logistics Management Information System
M&E	Monitoring & Evaluation
MDS	Minimum Data Set
MHPSS	Mental Health and Psychosocial Support
MoH	Ministry of Health
MPXV	Mpox virus (formerly monkeypox virus)
NCDC	Nigeria Centre for Disease Control and Prevention
NMC	Notifiable Medical Conditions
NPHI	National Public Health Institute
OCHA	UN Office for the Coordination of Humanitarian Affairs
PHEIC	Public Health Emergency of International Concern
PHERP	Public Health Emergency Preparedness and Response Plan
PoE / PoEs	Point(s) of Entry
PPE	Personal Protective Equipment
RCCE	Risk Communication and Community Engagement
REC / RECs	Regional Economic Community(ies)
RRT	Rapid Response Team
SIMAR	National Animal Disease Information System (aligned with WOAH)
SMS	Short Message Service
SOP	Standard Operating Procedure
SORMAS	Surveillance Outbreak Response Management and Analysis System
TAT	Turnaround Time (laboratory)
TG	Technical Guidance / Guideline
TWG	Technical Working Group
UNICEF	United Nations Children's Fund
WHO	World Health Organization
WOAH	World Organization for Animal Health (formerly OIE)

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Executive summary

The resurgence of mpox in multiple African countries since 2022 has highlighted urgent gaps in preparedness, detection, and response capacities across the continent. While the mpox outbreak was initially classified as a Public Health Emergency of International Concern (PHEIC) and a Public Health Emergency of Continental Security (PHECS), the risk of continued transmission in high-risk areas of Africa remains significant, particularly due to persistent zoonotic reservoirs, cross-border spread, and fragile surveillance systems.

In response, the Joint Continental Incident Management Support Team (IMST), co-led by WHO AFRO and Africa CDC with contributions from key partners, initiated the development of this Continental Mpox Surveillance Strategy. The goal is to provide a harmonized, adaptable, and sustainable framework that guides African Union Member States in strengthening mpox surveillance capacities, integrating mpox monitoring into routine national systems, and preparing for future outbreaks in line with International Health Regulations (IHR 2005) and the IDSR framework.

This strategy outlines core components of effective mpox surveillance including alert detection, case investigation, laboratory confirmation, contact tracing, community-based surveillance, health information management, One Health coordination, and cross-border surveillance. It offers a roadmap tailored to countries' epidemiological status, surveillance maturity, and operational context, and provides actionable tools, SOPs, and benchmarks to guide implementation.

By leveraging lessons learned during the 2022–2025 continental response and aligning with existing WHO and Africa CDC guidelines, this strategy aims to transition mpox surveillance from reactive emergency response to a proactive, integrated component of national health security systems. It calls for enhanced partner coordination, investment in digital surveillance and genomic capacities, and strong engagement at the community and cross-border levels.

This strategy will facilitate Member States and partner's coordination towards achieving a resilient African surveillance ecosystem that detects mpox and other emerging threats early, responds effectively, and ultimately protects the health and well-being of populations across the continent.

I. Background and context of mpox in Africa

Mpox, historically endemic to Central and West Africa, has necessitated a dynamic shift in continental surveillance systems, moving from localized, passive monitoring of animal-to-human spillover to a coordinated, proactive, and continent-wide alarm system in response to evolving viral threats.

Before the 2022 global outbreak, mpox surveillance in endemic nations like the Democratic Republic of Congo (DRC), Nigeria, and Central African Republic was predominantly passive. Surveillance relied on healthcare workers reporting suspected cases of febrile rash illness, typically in rural and forest-adjacent communities where zoonotic transmission was most common. This routine monitoring was often integrated into the established Integrated Disease Surveillance and Response (IDSR) framework, an existing structure used by African nations to track priority diseases. This approach was adequate for managing sporadic cases and localized outbreaks tied to animal exposure. The global emergence of the Clade IIb outbreak in May 2022, primarily characterized by human-to-human transmission through sexual networks outside of Africa, spurred a critical re-evaluation of surveillance systems across the continent. The declaration of a Public Health Emergency of International Concern (PHEIC) by the WHO in July 2022 accelerated the urgency to reinforce detection capabilities in Africa. Following this, surveillance focus was broadened to incorporate revised case definitions, in addition to actively monitor high-risk groups for human-to-human spread, moving beyond the traditional focus on zoonotic cases.

Other surveillance initiatives like the molecular and genomic surveillance enhancement by global and continental actors including Africa CDC and WHO allowed countries to better track the lineage and movement of MPXV variants. An example was of the impact of such initiative was the ability of the DRC to detect the Clade 1b in 2023 which later spread to at least 25 countries in 2025. This variant exhibited an increased human-to-human transmissibility which triggered a rapid scale-up of the implementation of public health protocols, aimed at strengthening active case finding, case investigations and contact tracing.

While Mpox surveillance in Africa has evolved considerably, the 2024–2025 multi-country outbreaks exposed persistent systemic gaps. To bridge these, Member States must implement context-specific strategies that account for the diverse geographical distribution of clades and the shifting complexities of transmission dynamics (Figure 1).

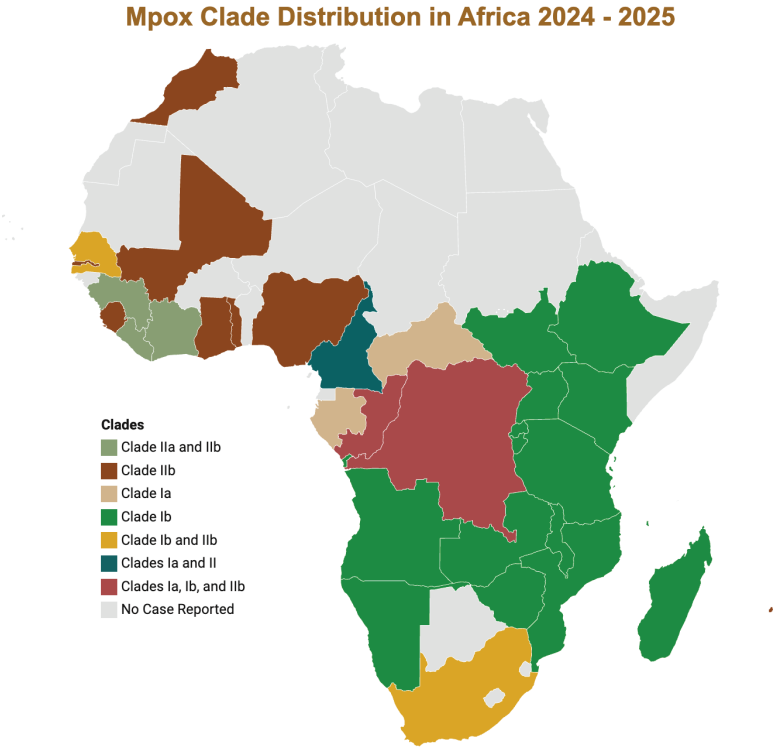

Figure 1: Distribution of MPXV clades on the African continent

Names and boundaries shown do not imply Africa CDC/WHO opinion on the legal status of any area or its authorities. Clade distribution data from MS reported genomic sequencing from 2024 to 2025

II. Challenges of mpox surveillance in Africa

Despite notable progress, mpox surveillance across Africa continues to face systemic, technical, and operational challenges that undermine the efficiency and sustainability of response systems. The following challenges were highlighted [in the recent (2024-2025) mpox outbreak] across Member States through country presentations, IAR reports, and technical discussions:

Stakeholder Engagement and One Health Integration:

There remains a significant gap in the engagement of private sector providers and clinics, which is concerning given their central role in community-level care. This lack of integration extends to the animal health sector, directly undermining the efficacy of One Health approaches. Furthermore, other stakeholders like traditional healers and informal health providers often the primary point of contact in many communities are often left out during community engagement initiatives. The lack of participation from non-state actors and animal health professionals in technical sessions and webinars further highlights the need for a more inclusive outreach strategy.

Cross-Border Surveillance:

Cross-border coordination remains weak or entirely absent in critical regions, such as between the DRC and its nine neighbouring countries, as well as between Togo, Benin, and Ghana. Despite high population mobility and porous borders, the implementation of formal surveillance mechanisms is limited. These gaps are exacerbated by inadequate infrastructure and a shortage of human resources at Points of Entry (PoE), making effective monitoring nearly impossible.

Technical and Operational:

Operational efficiency is hampered by delayed contact tracing, insufficient case investigations, and a critical shortage of test kits and reagents, which stalls confirmation and sequencing. Data integration across pillars remains a persistent challenge due to poor interoperability between platforms such as IDSR, laboratory systems, case management, and vaccination. Additionally, the inconsistent use of digital tools noted in several countries have led to poor data quality. In addition, the lack of sustainability pathways community health workers has resulted in underreporting and poor contact tracing performance. These technical hurdles are further complicated by rural stigma and mistrust in several countries which causes delays in care-seeking and resistance to isolation protocols.

Governance and Policy:

Centralized coordination, particularly in the most affected countries limited the autonomy of provincial and district authorities to drive the response and implement context specific interventions. This top-down approach is also coupled with significant delays in the allocation and release of resources, affecting response timelines in response. The absence of formal agreements, such as Memorandum of understanding for cross-border surveillance amongst several neighbouring revealed impeded cross border coordination and collaboration.

Financial and Logistical Constraints:

The limited domestic and donor finances to fund response plan has been reported by several countries as one of the challenges to optimally roll out surveillance strategies during the mpox response. In addition, logistical capacity is severely limited by a lack of vehicles, fuel, and poor road infrastructure in especially in hard-to-reach areas.

Community Engagement and Risk Communication:

Low awareness of symptoms and insufficient community engagement remain major barriers, particularly in rural areas. In certain high-risk groups such as sex workers, this has manifested as active resistance to response teams due to associated stigma. Stigma associated with infection continues to discourage patients from seeking formal medical care highlighting a critical need for more culturally sensitive risk communication strategies.

Human Resource and Institutional Capacity:

The workforce is stretched thin by a shortage and uneven distribution of trained epidemiologists, lab staff, and community health workers. In high burden countries, health workers face severe burnout due to protracted outbreaks and overlapping emergencies. This is worsened by high staff turnover, a heavy reliance on external partners, and a lack of sustainable motivation for community health workers

III. Purpose and objectives of the strategy

Purpose

The purpose of this continental Mpox surveillance strategy is to strengthen Africa's capacity to detect, report, and respond to Mpox cases and outbreaks rapidly and effectively, ensuring timely public health action that reduces morbidity, mortality, and cross-border spread.

Main objective

The main objective is to improve rapid case detection, reporting, and analysis to support prompt and coordinated public health responses at national and regional levels. Timeliness is therefore positioned as a core performance pillar of the strategy.

To achieve this, the strategy promotes an integrated and collaborative approach anchored in the IDSR framework and guided by One Health principles. It also leverages digital innovation, cross-sectoral collaboration, and community engagement to ensure sustainability and early action.

Specific objectives

1. Enhance early detection and notification of suspected Mpox cases and outbreaks across all Member States through strengthened event-based and community-based surveillance.
2. Improve the timeliness and quality of case investigation, contact tracing, and laboratory confirmation, including genomic sequencing, to facilitate rapid decision-making.
3. Establish interoperable surveillance and data management systems for real-time reporting and cross-sector information sharing.
4. Institutionalize Mpox surveillance within IDSR and One Health frameworks to ensure sustained prioritization and alignment with existing national systems.
5. Build resilient surveillance capacity at national, subnational, and community levels, including human resources, logistics, and digital tools.
6. Promote risk communication and community engagement (RCCE) to strengthen public awareness, reduce stigma, and encourage timely care-seeking and reporting.
7. Reinforce cross-border and regional coordination mechanisms to detect, report, and respond to transboundary transmission.
8. Ensure sustainability and adaptability of Mpox surveillance systems to respond to evolving epidemiological trends and new dynamics.

IV. Categorization of countries based on epidemiological status and operational implications for surveillance

For the purpose of this strategy, African Union Member States are categorized into three broad epidemiological groups based on their current mpox transmission patterns, historical presence of the virus, and risk of importation or resurgence. This categorization is essential for tailoring surveillance strategies, prioritizing resources, and guiding technical support.

Category 1: Endemic countries

These are countries where the mpox virus is regularly detected in humans and/or animals (primarily rodents and non-human primates), with varying levels of human-to-human transmission. Transmission in these settings is often linked to both zoonotic spillover events and sustained local human transmission chains. The definition of an endemic country for mpox depends on the specific clade and the source of transmission:

- Clades Ia and IIa: Countries where mpox has been detected in the animal including wildlife and or human population for at least two consecutive years.
- Clades Ib and IIb: Countries where human-to-human transmission is established, defined by reported cases with no travel history for at least two consecutive years.

Operational implications for surveillance:

- Establish routine surveillance that links human health, animal health, and environmental data. This involves monitoring hotspots where human-wildlife interaction is high to detect zoonotic spillover early.
- Empower community health workers and local leaders to report unusual clusters of skin rashes or unexplained deaths in wildlife (rodents/primates), as these communities are often the first point of contact.
- Maintain continuous (rather than just outbreak-specific) genomic sequencing to monitor the evolution of clades and detect the emergence of more transmissible or virulent strains within the endemic reservoir.
- Designate specific hospitals and clinics in high-risk geographic areas as sentinel sites to provide consistent, high-quality data on disease trends and severity over time.
- Shift from centralized national testing to sub-national or district-level laboratory capacity to reduce laboratory turnaround time, which is critical in remote endemic regions.

Examples: DRC, Nigeria, Central African Republic, Republic of the Congo, Cameroon, and others with persistent or recurrent local transmission.

Category 2: Non-endemic countries with active outbreak

These are countries where mpox is not historically endemic, but where the disease has been introduced, often through cross-border movement or international travel. These countries are experiencing an active, ongoing outbreak with sustained local transmission.

Operational implications for surveillance:

- Intensified alert and event-based surveillance, especially at Points of Entry (PoE) and among high-risk population
- Implement wastewater/environmental surveillance, particularly at Points of Entry, in adjacent communities e.g border towns or airports to detect silent or imported mpox transmission.
- Rapid case detection, exhaustive contact tracing, and daily situation monitoring during outbreaks.
- Weekly genomic sequencing of early and atypical cases to identify clade introduction.
- Deployment of surge capacity for outbreak management and containment.
- Establishment of a 4-week *outbreak baseline* to measure response timeliness and performance.

Examples: Countries that have experienced recent outbreaks following importation, e.g., Burundi, Ghana, Liberia, Kenya, and Uganda (during re-emergent outbreaks).

Category 3: Non-endemic countries with controlled or no local transmission

These are countries where mpox is not historically or regularly found and that are currently reporting no active local transmission. They may have reported sporadic imported or travel-associated cases, but without evidence of sustained local spread.

This category also includes countries that, while reporting zero probable or confirmed cases in the past six weeks, have direct epidemiological connectivity to endemic areas through shared borders (land or water) or direct air travel routes with Category 1 countries.

Operational implications for surveillance:

- Maintain high vigilance through event-based and indicator-based surveillance.
- Strengthen PoE and traveler screening systems, especially in airports and land crossings connected to endemic or outbreak countries.
- Implement wastewater/environmental surveillance, particularly at Points of Entry, in adjacent communities e.g border towns or airports to detect silent or imported mpox transmission.
- Establish readiness protocols, including specimen transport systems and contact tracing plans.
- Conduct regular cross-border coordination meetings and data sharing with neighboring high-risk countries.
- Conduct rapid readiness assessments every six months.

Examples: Seychelles, Botswana, Rwanda, South Africa, and others maintaining readiness but at high importation risk due to travel or border linkages with endemic countries.

Modalities of reclassification

Country categorization is dynamic rather than static, as nations may be reclassified based on evolving epidemiological trends, genomic evidence of local circulation, the patterns of imported cases, and the overall effectiveness of their surveillance and response activities. To maintain accuracy, WHO AFRO and Africa CDC will review these classifications monthly, utilizing the latest surveillance data, laboratory findings, and official country reports. This flexible framework enables differentiated strategies for resource allocation and technical support, ensuring that endemic, outbreak-prone, and at-risk countries can implement context-appropriate measures while remaining aligned with coordinated regional oversight.

V. Mpox surveillance strategic actionsbased on epidemiological thresholds

Effective mpox surveillance must translate epidemiological signals into timely, proportionate, and context-specific public health action. Given the heterogeneous epidemiology of mpox across Africa, the same epidemiological event may require different responses depending on whether it occurs in an endemic, outbreak-affected, or non-endemic setting.

Epidemiological thresholds provide pragmatic triggers for action, enabling timely, proportional, and context-specific surveillance and response. These thresholds are applied proportionately and contextually, recognizing that the same event may require different responses in endemic and non-endemic settings. A single confirmed case in a non-endemic setting may warrant stronger activation than the same signal in an endemic area. When resurgence criteria are met, an additional package of escalation measures is implemented on top of routine surveillance and response actions.

Table 1: Core alert & action thresholds (with differentiated responses)

Thematic area	Indicator & Alert Threshold	Categorization of affected district	Rationale	Recommended actions – Endemic setting	Recommended actions – Non-endemic setting
Surveillance	Confirmed imported case (≥1) detected in a district	Non-endemic	Possible introduction or seeding into new area		1) Activate national RRT/IMS (light mode); isolate; exhaustive contact tracing. 2) Targeted screening in travel/close-contact networks; immediate RCCE and traveler advisory. 3) Enhanced cross border coordination and systematic information sharing 4) Activate active case search in reporting district and Continue EBS and CBS in districts not reporting yet
Surveillance	Local cluster (≥2 epi-linked confirmed locally acquired cases) in a district OR confirmed case in prison, camp, school, etc	Endemic and non-endemic	Indicates local transmission	1) Intensify active case /EBS; expand tracing to second-ring contacts. 2) Enhance facility triage and IPC reminders. 3. Enhance one health approach in surveillance, case investigation and response.	1) Escalate Incident Management (IM); surge investigation teams. 2) Consider ring vaccination (if available) per national policy; daily situation updates. 3) Activate active case search in reporting district and Continue EBS and CBS in districts not reporting yet
Surveillance	>50% increase in 7-day average within a 14-day period OR 2x increase in new weekly cases OR ≥3 days of rising daily confirmed cases	Endemic and non-endemic	Acceleration of community transmission	1) Declare localized resurgence-Activate surge response teamUpdate risk mapping and predictive models 2) Expand testing access, review case definition breadth. 3) Boost CBS and community line-listing in hotspots.	1) Expand testing sites and mobile sampling. 2) Pre-position PPE/supplies; prepare contingency beds.

Thematic area	Indicator & Alert Threshold	Categorization of affected district	Rationale	Recommended actions – Endemic setting	Recommended actions – Non-endemic setting
Surveillance	Unlinked cases (≥2 with no epi link or travel) in one district/facility	Non-endemic	Suggests gap in surveillance and community transmission		1) Full outbreak posture: IM scale-up; community screening around exposure venues. 2) Work with municipalities for venue/setting-specific measures. 3) Activate active case search nationwide.
Surveillance	New district affected after ≥6 weeks with no cases	Non-endemic	Re-introduction/ spread		1) Activate rapid screening at PoE/transport hubs. 2) Issue national advisory to clinicians and private sector.
IPC	HCW infection (≥1 confirmed)	Endemic and non-endemic	IPC breach & amplifying risk	Immediate facility IPC audit; correct PPE/triage gaps; monitor exposed staff.	As endemic + national alert to facilities; reinforce standard/airborne precautions guidance; spot-checks.
Case Management	Bed occupancy >50% in mpox ward (referral facility)	Endemic and non-endemic	Stress on isolation/care capacity	Open overflow areas; adjust admission criteria for mild cases (home care SOPs).	Stand up step-down/alternate care sites; activate referral redistribution; mobilize extra staff/logistics.
Case Management	CFR ≥1% OR Bed occupancy ≥70% OR ≥3 generations of person-to-person transmission	Endemic and non-endemic	Signals clinical or surveillance gaps	Rapid mortality audit; clinical mentorship; ensure essential meds; review referral delays.	1) Same as endemic + external clinical consult (tele-mentorship) and targeted supply push. Escalate to national incident coordination 2) Activate contingency bed capacityStrengthen supply chain and case management oversight
Laboratory	Positivity >10% over ≥10 valid tests OR ≥5 percentage point increase over prior 7-day average	Endemic and non-endemic	Testing too restrictive / wider spread	Expand community testingReassess case definition sensitivityReinforce CBS-EBS linkage	Same + pop-up testing in exposure venues; fast logistics for referral labs.
One Health	Zoonotic alert (animal illness/deaths or human–animal exposure)	Endemic and non-endemic	Spillover risk in Clade I/IIa zones	Joint Vet–MoH investigation; sample animals/humans; localized RCCE.	As endemic + import control advisory (wildlife/products); notify PoE and CITES focal points.

Notes: ACS = Active Case Search; EBS/CBS = Event-/Community-Based Surveillance; IM/IMS = Incident Management (System); IPC = Infection Prevention & Control; CFR = Case Fatality Rate; PoE = Points of Entry; RCCE= Risk communication and community engagement; CITES= Convention on International trade in endangered species of wild fauna and flora.

VI. Roadmap for the implementation of the surveillance strategy

1. Partner and stakeholder mapping

Primary Partners

African Union Member States are the main implementers of the strategy.
Within each country, the Ministry of Health (MoH), through the National Public Health Institute (NPHI) or the Epidemiology Department, serves as the lead authority responsible for coordinating surveillance, laboratory testing, data reporting, and response activation.

Implementation is conducted in close collaboration with:

- Ministries in charge of animal and wildlife health – for zoonotic and One Health surveillance.
- Ministries of environment and agriculture – for ecosystem monitoring and integration of environmental determinants.
- Border health and immigration authorities – for cross-border and Points of Entry (PoE) surveillance.
- Subnational health authorities – for district-level data collection, investigation, and reporting.
- Community structures and civil society organizations – for community-based surveillance (CBS), risk communication, and social mobilization.

Technical and development partners

Implementation is technically supported by a network of partners including:

- Africa CDC and WHO provides overall technical leadership, normative guidance, capacity building, and coordination with country offices. They are to co-leads continental coordination, supports harmonization of indicators, cross-border frameworks, and integration into event-based surveillance systems.
- FAO and OIE/WOAH – support animal health surveillance, laboratory capacity, and joint risk assessments.
- UNICEF and IFRC – support CBS and RCCE implementation in communities.
- World Bank, GAVI, CEPI, and other donors – contribute financial and technical resources for surveillance strengthening and integration into national systems.
- Academic and research institutions – provide training, operational research, and genomic analysis support.
- Private sector laboratories and clinics – participate in case detection, testing, and notification in line with national surveillance protocols.

2. Establishing sustainable coordination mechanism and roles

To ensure the effective management and long-term monitoring Mpox, it is essential to establish a structured and sustainable governance framework. The table below outlines a multi-tiered coordination mechanism designed to streamline operations across national, subnational, and international levels. By defining clear roles and core functions for each body, this framework facilitates the integration of surveillance into existing national systems, and fosters seamless collaboration between government entities, global health organizations, and financial partners.

3. Establishing baselines, monitoring, evaluation and accountability framework

Establishing a baseline for measurement
Baseline assessments of surveillance timeliness and completeness will guide target setting and enable monitoring of progress toward faster, more coordinated detection and response across all Member States. To ensure that improvements in rapid case detection, reporting, and analysis are measurable, this strategy introduces a dual-level baseline assessment framework. This will provide the evidence base to monitor progress and guide corrective actions over time.

Purpose of the baseline

The baseline assessment establishes the current performance of national and subnational surveillance systems on key Mpox indicators—particularly timeliness, completeness, and coordination. It serves as the reference point for evaluating whether surveillance systems are becoming faster, more accurate, and more responsive during both routine monitoring and outbreak situations.

Table 2: Coordination at different administrative levels

Level	Coordination Body / Role	Core Functions
Subnational Level	Provincial and District Health Authorities	• Operationalize surveillance activities and conduct contact tracing, CBS/EBS, and sample transport. Ensure data completeness and timeliness. Supervise field teams and ensure feedback loops.
National Level	National Public Health Institute / MoH Surveillance Unit	• Lead implementation of the strategy and integration into IDSR. • Ensure routine and outbreak baseline assessments are conducted and reported. • Oversee data collection, analysis, and reporting through DHIS2. • Convene weekly surveillance review meetings. • Coordinate laboratory referral and genomic sequencing processes. • Ensure engagement of private and animal health sectors.
Continental Level	WHO AFRO and Africa CDC Joint Mpox IMST	• Provide overarching technical direction, coordination, and monitoring. Consolidate continental performance data and maintain the Mpox surveillance dashboard. Support cross-border coordination and joint outbreak investigations. Facilitate partner alignment under "One Plan – One Budget – One Monitoring Framework."
Partners and Donors	Technical and Financial Support Mechanism	• Provide resources, tools, and technical assistance. Support operational research, digitalization, and evaluation. Align funding with national priorities and baseline indicators.

Levels of baseline assessment

a. **Systemic (Preparedness) baseline**

- Conducted at the start of strategy implementation and updated annually.
- Measures the *structural and functional capacity* of national surveillance systems using data from the preceding 6–12 months.
- Reflects the overall efficiency of case detection, reporting, investigation, and laboratory confirmation under routine conditions.
- It applies primarily to endemic countries, where Mpox surveillance operates continuously through IDSR and One Health systems.

b. **Outbreak-specific (Event-Based) baseline**

- Conducted by the end of the fourth week of a newly declared outbreak or resurgence.
- Captures the *initial response performance,* the speed and quality of early detection, notification, confirmation, and response activation.
- Particularly relevant to non-endemic countries or districts with newly re-emerging cases.
- Serves as the starting point for measuring improvement at weeks 8 and 12 of the response.

Table 3: Core indicators for both baselines

Indicator	Definition	Typical Data Source	Target
Median time from symptom onset to notification	Average number of days between case onset and first notification to the health system	Case-based line lists / IDSR	≤2 days
Median time from notification to sample collection	Time from case reporting to specimen collection	IDSR / laboratory registers	≤1 day
Laboratory turnaround time (TAT)	Time from sample receipt to confirmation	National or regional laboratory data	≤72 hours
Proportion of suspected cases reported within 24 hours	% of suspected cases notified within 24h of detection	IDSR / EBS / CBS	≥80%
Proportion of confirmed cases with completed investigation forms	Completeness of case investigations	Case-based database	≥90%
Proportion of contacts traced and followed for 21 days	% of listed contacts monitored for 21 days	Contact tracing database	≥80%
Time from alert verification to response activation	Average time between alert validation and field response	IMS / SitRep/ DHIS-2 tracker/ EWARS	≤24 hours

i. Frequency and use of the baseline

- **Endemic areas:** Baseline indicators integrated into routine IDSR and laboratory monitoring, analyzed semi-annually to track systemic improvement.
- **Non-endemic areas**: A Week-4 outbreak baseline is established after detection of the first confirmed case to evaluate readiness and early response performance.

ii. Use of baseline results for resource mobilization and partner support

Baseline assessment results will not only serve as performance benchmarks but will also be actively used to guide resource prioritization and partner support at national and subnational levels. Countries and districts demonstrating critical gaps in surveillance timeliness, completeness, laboratory turnaround time, or contact tracing performance will be prioritized for targeted technical assistance, surge deployments, and catalytic financing from WHO, Africa CDC, and partners. Baseline findings will further inform partner coordination, allocation of flexible or contingency funds, and sequencing of surveillance investments, ensuring that resources are directed to areas of highest operational need and potential impact. This approach strengthens accountability, links surveillance performance to tangible support, and reinforces the use of data for decision-making and financing within national and continental mpox surveillance systems.

VII. Monitoring, evaluation and accountability framework

To ensure effective, practical, and streamlined performance monitoring, the Key Performance Indicators (KPIs) for mpox surveillance are organized into a two-tier framework. This approach distinguishes operational KPIs required for real-time outbreak management from system-level KPIs used to assess surveillance effectiveness, integration, and sustainability over time.

This tiered structure reduces duplication, aligns reporting frequency with decision-making needs, and supports both immediate response and long-term system strengthening.

Tier 1: Core operational KPIs (Weekly / Dailyduring active outbreaks)

Purpose

Tier 1 KPIs (Table A-E), monitor the day-to-day functionality, timeliness, and completeness of mpox surveillance and response operations. These indicators are used by district, national, and IM-level teams to guide immediate corrective action during routine surveillance and active outbreaks.

Reporting frequency

- Weekly under routine surveillance
- Daily or semi-weekly during outbreaks or resurgence

Use of Tier 1 KPIs

Tier 1 KPIs are reviewed during:

- Weekly national surveillance meetings
- Incident Management (IM) operational briefings
- District-level supervision and response coordination

Failure to meet Tier 1 targets should trigger immediate operational adjustments, including surge deployment, retraining, logistics support, or intensified supervision.

Table 4 (A-E): Tier 1 Key performance indicators

A. Alert detection, verification, and notification

Indicator	Numerator	Denominator	Target	Purpose
Total mpox alerts notified	Number of mpox alerts notified in reporting period	N/A	N/A	Measures overall sensitivity of the surveillance system
Proportion of alerts verified	Alerts verified	Total alerts notified	≥80%	Assesses alert follow-up and verification efficiency
Proportion of verified alerts meeting case definition	Alerts meeting suspected case definition	Total alerts verified	≥80%	Measures appropriateness of alerts
Proportion of suspected cases notified within 24h	Suspected cases notified ≤24h	Total suspected cases	≥80%	Evaluates timeliness of notification

B. Case investigation and sampling

Indicator	Numerator	Denominator	Target	Purpose
Proportion of suspected cases investigated	Suspected cases investigated	Total suspected cases	≥80%	Measures completeness of investigation
Proportion investigated within 24h	Suspected cases investigated ≤24h	Investigated suspected cases	≥80%	Measures field investigation timeliness

Indicator	Numerator	Denominator	Target	Purpose
Proportion of suspected cases sampled	Suspected cases with specimens collected	Total suspected cases	≥80%	Assesses sampling coverage
Proportion sampled within 24h	Suspected cases sampled ≤24h	Sampled suspected cases	≥80%	Measures timeliness of sample collection

C. Laboratory testing and turnaround time

Indicator	Numerator	Denominator	Target	Purpose
Proportion of samples sent to laboratory	Samples sent to laboratory	Samples collected	≥80%	Assesses sample transport efficiency
Proportion of samples received	Samples received	Samples sent	100%	Measures logistics reliability
Proportion received within 24h	Samples received ≤24h	Samples received	≥80%	Evaluates transport speed
Proportion of samples tested	Samples tested	Samples received	≥95%	Measures lab testing throughput
Proportion of results available ≤24–72h	Results released within TAT	Samples tested	≥80%	Monitors lab turnaround time
Test positivity rate	Positive samples	Samples tested	Contextual	Indicates outbreak trend and testing adequacy

D. Contact tracing and monitoring

Indicator	Numerator	Denominator	Target	Purpose
Case-to-contact ratio	Total contacts listed	Confirmed cases	≥1:15–20	Evaluates completeness of contact listing
Proportion of cases with contacts listed	Confirmed cases with ≥1 contact	Total confirmed cases	≥90%	Measures contact identification
Proportion of contacts followed for 21 days	Contacts followed 21 days	Total contacts	≥80%	Measures follow-up completion
Secondary attack rate	Contacts becoming confirmed cases	Contacts followed	—	Measures secondary transmission
Proportion of eligible contacts vaccinated	Contacts vaccinated	Eligible contacts	≥80%*	Evaluates ring vaccination performance

* where vaccination is available and recommended

E. Case management and outcomes

Indicator	Numerator	Denominator	Target	Purpose
Proportion of confirmed cases hospitalized	Confirmed cases hospitalized	Total confirmed cases	≥80% (moderate/severe)	Measures access to care and isolation
Proportion of moderate/severe cases hospitalized	Moderate/severe cases hospitalized	Moderate/severe cases	100%	Ensures proper clinical management
Proportion of mild cases managed at home	Mild cases under home care	Mild confirmed cases	≥90%	Evaluates safe home-based care

Tier 2: System performance KPIs (Monthly / quarterly)

Purpose
Tier 2 KPIs (Table i-v) assess the effectiveness, coverage, integration, and sustainability of mpox surveillance within national health systems. These indicators inform policy decisions, partner support, financing, and institutionalization efforts.

Reporting frequency

- Monthly (national review)
- Quarterly (regional / continental review)

Use of Tier 2 KPIs
Tier 2 KPIs are used to:

- Track progress toward institutionalization of mpox surveillance
- Identify systemic bottlenecks and capacity gaps
- Prioritize partner support, catalytic financing, and technical assistance
- Inform annual WHO–Africa CDC joint reviews and continental dashboards

Table 5 (i-v): Tier 2 Key Performance Indicators

i. Surveillance coverage and reporting

Indicator	Numerator	Denominator	Target	Purpose
Districts submitting weekly mpox reports	Reporting districts	Total districts	≥90%	Measures reporting completeness
Districts using IDSR for mpox reporting	IDSR-reporting districts	Total districts	100%	Assesses IDSR integration
Subnational levels implementing CBS/EBS	Subnational units with CBS/EBS	Total subnational units	≥90%	Measures event-based surveillance coverage

ii. Data quality and completeness

Indicator	Numerator	Denominator	Target	Purpose
Cases with age and sex recorded	Cases with age & sex	Total cases	≥80%	Measures demographic completeness
Cases with date of onset recorded	Cases with onset date	Total cases	≥80%	Enables trend and timeliness analysis
Cases with vaccination status recorded	Cases with vaccination data	Total cases	60–90%	Supports vaccine effectiveness analysis
Cases with animal exposure documented	Cases with exposure info	Total cases	≥80%	Supports One Health analysis
Cases with HCW status recorded	HCW status documented	Probable/confirmed cases	≥80%	Monitors occupational risk
Concordance between surveillance & lab data	Matching records	Total records	≥95%	Measures data interoperability
Proportion of suspected deaths investigated	Deaths investigated	Suspected mpox deaths	≥90%	Ensures mortality surveillance completeness

iii. Digitalization and interoperability

Indicator	Numerator	Denominator	Target	Purpose
Districts using digital case-based reporting	Digital-reporting districts	Affected districts	60–90%	Measures digital coverage
Facilities syncing data weekly	Facilities syncing weekly	Reporting facilities	≥90%	Measures system functionality

iv. Cross-border and PoE surveillance

Indicator	Numerator	Denominator	Target	Purpose
Borders with active coordination mechanisms	Borders with MoUs/ SOPs	Priority borders	100%	Measures cross-border readiness
Priority PoEs with trained staff & SOPs	PoEs compliant	Priority PoEs	≥90%	Measures PoE preparedness
Timeliness of PoE alert notification	Alerts ≤24h	PoE alerts	≤24h	Measures rapid notification

v. Governance, learning, and sustainability

Indicator	Numerator	Denominator	Target	Purpose
National surveillance performance reviews conducted	Reviews held	Planned reviews	≥90%	Ensures routine accountability
AARs / cluster reviews conducted	Reviews completed	Clusters/outbreaks	100%	Supports continuous learning
Mpox included in national IDSR budgets	Yes/No	—	Yes	Measures institutionalization

Relationship between Tier 1 and Tier 2 KPIs

Tier 1 and Tier 2 KPIs are complementary:

- Tier 1 KPIs ensure that mpox surveillance and response are functioning effectively in real time.
- Tier 2 KPIs ensure that surveillance systems are robust, integrated, and sustainable over time.

Together, they provide a comprehensive performance monitoring framework that supports early detection, rapid response, accountability, and long-term health system strengthening.

Tools and methods for monitoring progress

To ensure effective monitoring, countries and regions should employ a combination of digital, analytical, and participatory tools:

- **Digital surveillance platforms:** Use interoperable electronic systems (e.g., DHIS2, EWARS, SORMAS) for real-time data capture, validation, and analysis.
- **Routine data quality audits (DQAs):** Conduct quarterly DQAs focusing on completeness, timeliness, and accuracy of Mpox surveillance data.
- **Geospatial and temporal analysis:** Utilize GIS and time-series analytics to identify hotspots, emerging clusters, and transmission patterns.
- **Stakeholder feedback mechanisms:** Establish regular feedback loops between surveillance officers, laboratories, and community networks to improve performance and coordination.
- **Dashboard-based monitoring:** Maintain a national mpox surveillance dashboard integrating country-level indicators for bench marking and trend analysis.

VIII. Integration and institutionalization of mpox surveillance within routine health and One Health Systems

The transition from emergency mpox surveillance to routine public health systems is critical to preserving the surveillance gains achieved during outbreaks. Effective implementation of this Mpox Surveillance Strategy requires coordinated leadership and collaboration among national, regional, and continental actors to embed mpox surveillance within existing IDSR, epidemic intelligence, and One Health frameworks. This integrated approach promotes sustained readiness, efficient use of resources, timely data sharing, and accountability across all levels of the public health system.

The process is implemented in two progressive phases:

- **Phase 1 (Immediate transition):** Align and operationalize Mpox within IDSR and One Health systems without compromising detection capacity.
- **Phase 2 (Institutionalization):** Embed Mpox surveillance permanently within routine epidemic intelligence and national governance structures.

Phase 1 – Immediate Transition

Strategic objective: Shift Mpox from emergency response mode into existing IDSR and One Health platforms while maintaining sensitivity for early detection.

Table 6: Actions for Phase 1 of Transition Roadmap

Focus Area	National / Country Level	Continental / Regional Support
Policy & Governance	• Add Mpox to the national list of notifiable diseases and the One Health zoonoses list. • Integrate private facilities into IDSR reporting and supervision systems. • Establish joint coordination mechanisms between MoH, Veterinary, and Environmental sectors. • Incorporate Mpox into national PHERP and epidemic preparedness frameworks.	• Endorse Mpox as a continental priority zoonosis. • Provide standard templates, SOPs, and tools for case reporting, line lists, and surveillance integration. • Develop regional guidance for private sector engagement within IDSR.
Systems & Tools	• Update IDSR guidelines, CRFs, and data collection tools to include Mpox. • Configure Mpox modules in DHIS2, EWARS, or SORMAS. • Integrate laboratory, PoE, and CBS forms into the HMIS. • Add Mpox to national animal reporting and EBS signal lists (SIMAR/WOAH).	• Provide technical support for DHIS2, EWARS, and SORMAS integration. • Disseminate regional EBS alerts and trend analyses to Member States.

Surveillance Coverage	• Ensure routine reporting from community → facility → district → national levels. • Strengthen CBS in hotspots using • CHWs and animal health workers. • Initiate environmental surveillance (wastewater, wildlife, bushmeat markets).	• Provide technical guidance on environmental surveillance pilots. • Facilitate comparative analysis of CBS/EBS yield across countries.
Training & Capacity Building	• Include Mpox in pre-service and in-service IDSR training programs. • Train CBS agents, PoE officers, and veterinary staff on Mpox detection and reporting. • Strengthen data management and feedback capacity at district level.	• Organize regional Training-of-Trainers (ToT) on IDSR, CBS, and One Health modules. • Facilitate cross-country exchange of lessons learned.
Event-Based Surveillance (EBS)	• Integrate Mpox signals within existing EBS systems covering human, animal, and environmental health. • Strengthen rumor verification mechanisms.	• Maintain continental epidemic intelligence scanning and share alerts weekly.
Cross-Border & PoE Surveillance	• Activate MoUs and surveillance zones with neighboring countries. Link human and animal PoE data to IDSR. • Conduct PoE screening and tabletop simulations.	• Provide harmonized PoE SOPs and support joint exercises. • Facilitate regional MoUs through RECs.
Data Analysis & Feedback	• Conduct weekly analyses and publish national bulletins. • Maintain district-level dashboards for alerts and case trends. • Establish feedback loops with subnational structures.	• Issue monthly continental synthesis reports and provide feedback to Member States and partners.

Phase 2 – Institutionalization

Strategic objective: Embed Mpox surveillance within routine epidemic intelligence, One Health, and national health information systems for long-term sustainability.

Sustainable mpox surveillance requires progressive domestic financing to reduce reliance on emergency funding and external support. As part of institutionalization, Member States are expected to establish minimum domestic financing commitments for mpox surveillance within routine health system budgets.

At a minimum, countries should:

- Include a dedicated mpox surveillance line within national IDSR budgets and annual operational plans.
- Finance core surveillance functions (routine reporting, basic laboratory confirmation, and district-level investigation) through domestic resources.
- Aim to cover at least 30–50% of community-based surveillance (CBS) operational costs through domestic financing by the end of Year 2, with partner support focused on surge, innovation, and system strengthening.

These expectations are intended to be progressive and context-specific, recognizing differences in fiscal space, while reinforcing national ownership and sustainability.

Table 7: Actions for Phase 2 of Transition Roadmap

Focus Area	National / Country Level	Continental / Regional Support
Systems & Quality Assurance	• Include mpox in routine IDSR supervision and quarterly DQAs • Expand Mpox reporting to all districts and facilities (public, private, and CBS). • Maintain Mpox within national HMIS monitoring frameworks.	• Develop and standardize mpox indicators and DQA tools for cross-country comparison. • Coordinate peer learning and regional data reviews.
One Health Integration	• Strengthen animal-health and environmental surveillance (SIMAR, WOAH, wastewater, bushmeat markets, wildlife). • Develop and implement trigger-based animal surveillance protocols for die-offs in rodents and primates. • Conduct joint risk assessments and simulation exercises.	• Support establishment of a continental One Health data platform linking human, animal, and environmental signals. • Coordinate regional genomic and wastewater surveillance networks.
Digitalization & Data Interoperability	• Harmonize human–animal–environment data flows (DHIS2 ↔ SIMAR ↔ LIS ↔ PoE) • Maintain integrated national dashboards for real-time case tracking and analytics.	• Maintain and enhance the mpox dashboard for multi-sectoral data visualization. • Provide and update interoperability standards (API/HL7).
Cross-Border Coordination	• Conduct quarterly cross-border surveillance reviews and joint importation drills. • Institutionalize cross-border information exchange and joint data analysis.	• Facilitate regional coordination through RECs and technical working groups. • Mobilize partners for PoE strengthening and regional preparedness.
Community & Private Sector Engagement	• Institutionalize CBS reporting into routine health systems. • Mandate private facility reporting within IDSR, supported by supervision and incentives. • Sustain alert mechanisms in border and high-risk zones.	• Develop regional guidance for private sector participation • Track and compare private sector integration across countries.
Analysis, Feedback, and Learning	• Maintain monthly dashboards and readiness assessments. • Conduct micro-risk mapping and cluster detection analyses. • Hold quarterly performance reviews and after-action learning sessions.	• Issue quarterly continental performance reports synthesizing national data. • Support joint evaluations and exchange of best practices among Member States.

Sustainability and Financing	• Secure domestic funding lines for Mpox surveillance and response. • Institutionalize Mpox within national budgets and partner 4W matrices. • Conduct cost-effectiveness studies to demonstrate value of sustained investment.	• Advocate for integration of Mpox into continental health security financing mechanisms. • Support resource mobilization and accountability frameworks.

Environmental surveillance (including wastewater and environmental sampling) is recognized as an emerging and complementary surveillance modality for mpox. In the context of this strategy, environmental surveillance is positioned as a pilot or targeted application, to be implemented selectively in high-risk urban settings, endemic hotspots, or areas with recurrent transmission, where feasibility, laboratory capacity, and public health value are demonstrated. Environmental surveillance is not expected to be implemented universally across all Member States or districts, particularly in low-resource settings. Lessons generated from pilot implementations will inform future scale-up decisions and integration into broader One Health surveillance systems.

Expected Outcomes of institutionalization

- Mpox fully embedded in IDSR, One Health, and PHERP frameworks at national and regional levels.
- Routine surveillance maintained across public, private, and community sectors.
- Interoperable digital systems linking human, animal, environmental, and PoE data.
- Regular data analysis, feedback, and performance monitoring institutionalized.
- Sustainable financing and trained workforce secured for long-term implementation.

VIII. Operational Gap-to-Action framework for mpox surveillance integration (0–12 Months)

Countries may use this Operational Gap-to-Action Framework as the primary implementation checklist during the first 12 months of strategy rollout, guiding sequencing of activities, partner engagement, and monitoring of early progress toward surveillance integration.

Table 8: Implementation checklist for first 12 months

Thematic area	Practical gaps seen	Core strategies (0–6 months)	Institutionalization (6–12 months)	Lead actors	Key KPIs (examples)
Stakeholder engagement & One Health	Private sector, animal health, traditional healers not engaged; weak attendance in technical sessions	Map & onboard private clinics, labs, and veterinary services; sign simple collaboration ToRs; schedule quarterly joint briefings; include traditional healers & faith leaders in CBS	Formalize One Health MoUs (Human–Animal–Environment); embed private sector in TWGs; annual joint simulation	MoH/NPHI, Veterinary. Services, Private associations, IFRC/NGOs	% districts with private/animal-health reps in TWGs (≥80%); # joint One Health investigations/ quarter

Unequal support cascade to subnational levels	Support stuck at national; weak district ops	Create district micro-plans & budgets; deploy RRTs; monthly district coaching; standardize reporting packages	Integrate mpox into routine IDSR workplans and financing lines; district performance contracts	MoH/NPHI, Provinces/ Districts, Partners	% districts submitting weekly sitreps (≥90%); RRT deployment time (≤48h)
Cross-border & PoE surveillance	Limited coordination; porous borders; unmanned PoEs	Bi-national cross-border meetings; harmonize alerts & case definitions; PoE SOPs; traveler screening/referral pathways	Formal cross-border agreements; annual joint tabletop/live exercises; shared PoE dashboards	Neighboring MoHs, IOM/ WHO/Africa CDC, Port Health	# cross-border meetings/ semester (≥2); % priority PoEs with SOPs & trained staff (≥90%); time from PoE alert→notification (≤24h)
Contact tracing & case investigation	Under-tracing; missed home-treated cases	Standard tools; train & roster tracers; daily line-list audits; call/ SMS follow-up; escalate hard-to-reach via CHWs	Digital contact-tracing module (DHIS2/ Go.Data); retention & incentive scheme	Surveillance Pillar, District teams, CHWs	Case:contact ratio (target context-specific, e.g., ≥1:15); % contacts monitored 21 days (≥80%)
Diagnostics & lab TAT	Limited kits; slow transport; delayed confirmation	Map sample routes; use courier/motorbike networks; introduce RDT where validated; weekly stock tracking	Regional hub labs; specimen referral agreements; genomic sequencing plan (≥5% priority samples)	National Laba, Reference Labs, Partners	% suspected sampled within 24h (≥80%); median sample TAT to result (≤72h); sequencing coverage (≥5%)
Data systems & interoperability	IDSR not linked to LIS, hotlines, PoE; duplicate entry	Minimum data set; unique case ID; weekly reconciliation (EBS/CBS–IDSR–LIS); automate import templates	API/HL7 integration between DHIS2 & LIS/PoE; national interoperability guideline	HIS Unit, Lab IS, PoE, Hotlines	% districts using digital case-based reporting (≥80%); data concordance IDSR↔LIS (≥95%)
Connectivity & digitalization	Poor internet (rural); weak dashboards	Offline-first tools; data bundling for facilities; simple auto-dashboards (district → national)	Scaled connectivity packages for priority sites; national analytics hub	MoH HIS, Telcos (CSR), Partners	% facilities syncing weekly (≥90%); # automated dashboards live
Community engagement & stigma	Low awareness; refusal of tracing/ isolation	Co-design RCCE with communities; rumor tracking; targeted messages (youth, key networks); MHPSS referral	Embed RCCE into CBS SOPs; periodic social-listening & behavior metrics	RCCE, CBS, CSOs, Media	% alerts originating from CBS/EBS; time onset→first consultation (declining trend); stigma index (qual/ quant)

Governance, policy & emergency financing	Centralized coordination; delayed funds; absent MoUs	Update mpox policy notes (case def., thresholds, PoE); activate contingency funds; fast-track micro-grants to districts	Include mpox in national **Notifiable** lists & IDSR TG; multi-year budget lines; cross-border MoUs	MoH/Finance, Parliament, Partners	Time from request→fund release (≤7 days); # signed MoUs; policy updates approved
Logistics & supply chain	Few vehicles/ fuel; PPE & cold-chain gaps	Establish pooled transport (motorbike hubs); pre-position sampling kits/ PPE; route optimization	Framework contracts for courier/cold chain; e-LMIS for surveillance commodities	MoH Logistics, Partners, Private couriers	% districts with ≥1 weekly cold-chain pickup; stockout rate of critical items (≤5%)
Human resources & retention	Shortage/ turnover; burnout; special groups untrained	Rapid ToT; short refresher bursts; micro-incentives for CHWs/tracers; enlist motorcycle riders/traditional healers	Career pathways & retention packages; integrate mpox modules into pre-service curricula	Human resource Department, Training Schools, NGOs	# trained & active tracers; staff retention at 6/12 months (≥80%); supervision coverage (≥90%)
M&E, quality & learning	Weak routine reviews; data quality issues	Monthly data-quality checks; quarterly performance reviews using KPIs; after-action reviews for clusters	National M&E framework with targets; public dashboard; annual learning brief	M&E Unit, Surveillance, Partners	% indicators meeting targets; Data quality assessment error rate; # Intra and After action reviews conducted
Hard-to-reach & humanitarian settings	Insecurity, access constraints	Mobile outreach; negotiate humanitarian access; pop-up sampling; partner with local NGOs	Add mpox to humanitarian health kits; integrate with polio/cholera outreach; flexible funding window	MoH, OCHA/UN, NGOs, Security	% alerts investigated in insecure areas; # mobile missions/ month
Private out-of-pocket costs	Care-seeking delays due to costs	Fee waivers for testing/essential care; clear referral to public services	Policy to subsidize mpox diagnostics & essentials; reimburse private providers for notifications	MoH/Finance, Insurers, Private sector	% suspected tested without out of pocket; % of cases reported by private sector

IX. Governance of mpox surveillance beyond emergency activation

As mpox transitions from a protracted emergency response to an integrated, routine public health surveillance function, clear governance arrangements are required to ensure continuity, accountability, and timely action outside of formal emergency or IMST activation. This section defines governance structures, roles, and decision-making mechanisms that apply before, between, and after emergency activations, ensuring that mpox surveillance remains functional, responsive, and sustainable within national and continental health systems.

1. Governance principles

Mpox surveillance beyond emergency activation is guided by the following principles:

- **Continuity**: Surveillance functions must remain operational regardless of emergency grading or IMST status.
- **Proportionality**: Governance arrangements should enable graded escalation based on epidemiological thresholds rather than binary emergency declarations.
- **Subsidiarity**: Decisions should be taken at the lowest effective level, with escalation only when thresholds are exceeded.
- **Integration**: Mpox surveillance governance should be embedded within existing IDSR, epidemic intelligence, and One Health coordination structures.
- **Shared accountability**: National authorities retain primary responsibility, supported by regional and continental coordination mechanisms.

2. National-level governance arrangements

In the absence of an activated emergency response or national IMST, Mpox surveillance governance rests within routine national public health structures, led by the Ministry of Health (MoH) through the National Public Health Institute (NPHI) or equivalent epidemiology and surveillance directorate.

Key national governance functions include:

- Oversight of mpox surveillance integration within IDSR, including routine indicator-based surveillance, event-based surveillance (EBS), and community-based surveillance (CBS).
- Validation and interpretation of epidemiological thresholds and trends at national and subnational levels.
- Authorization of graded response actions (e.g. deployment of RRTs, intensified contact tracing, targeted RCCE) triggered by surveillance signals.
- Coordination with national laboratory networks, animal health authorities, and Points of Entry (PoE).
- Convening routine (e.g. weekly or bi-weekly) surveillance review meetings where mpox data are reviewed alongside other epidemic-prone diseases.

Where established, national epidemic intelligence or multi-hazard surveillance committees should explicitly include mpox as a standing agenda item, even in the absence of active transmission.

3. Subnational governance and decision authority

Provincial, regional, and district health authorities play a central role in mpox surveillance beyond emergency activation, particularly in endemic settings.

Their governance responsibilities include:

- Routine monitoring of mpox indicators and alerts through IDSR, EBS, and CBS.
- Initial verification of alerts and clusters and initiation of first-line response actions.
- Escalation of signals to national level when predefined thresholds are met (e.g. unlinked cases, geographic spread, rising positivity).
- Oversight of community engagement, contact tracing, and data quality at operational level.

To support effective governance, countries are encouraged to formalize district-level decision matrices that specify which actions can be taken locally and which require national authorization.

4. Graded escalation and relationship to emergency activation

This strategy distinguishes surveillance escalation from formal emergency activation.

- Crossing surveillance or resurgence thresholds does not automatically trigger emergency declarations.
- Threshold crossings trigger predefined surveillance and response actions, which may include:
    - Intensified case finding and testing,
    - Surge support to affected districts,
    - Activation of national coordination mechanisms in "light" or technical mode.
- Formal emergency activation (e.g. national IMST or public health emergency declaration) remains a separate decision, informed by surveillance data but subject to national legal and policy frameworks.

This approach ensures that mpox surveillance remains agile and responsive without over-reliance on emergency modalities.

5. Continental and regional governance

At continental level, WHO AFRO and Africa CDC provide strategic oversight, coordination, and accountability for mpox surveillance beyond emergency activation through joint mechanisms.

Key continental governance functions include:

- Consolidation and analysis of surveillance data from Member States.
- Periodic review of country epidemiological categorization and reclassification.
- Issuance of technical advisories, alerts, and risk assessments based on regional trends.
- Facilitation of cross-border information sharing and joint investigations.
- Monitoring of performance against agreed continental KPIs and baselines.

The Joint WHO–Africa CDC coordination platform for mpox surveillance continues to function outside IMST activation, ensuring continuity of technical leadership and partner alignment.

6. Cross-border and multi-country governance

For countries sharing borders with endemic or outbreak-affected areas, governance of mpox surveillance requires structured cross-border arrangements even in non-emergency periods.

These include:

- Designated cross-border surveillance focal points.
- Routine exchange of surveillance data and alerts.
- Joint review of cross-border transmission risks and mobility patterns.
- Periodic simulation exercises and tabletop reviews.

Regional Economic Communities may support these arrangements by providing platforms for coordination, standardization, and dispute resolution where needed.

Failure to notify cross-border mpox events or alerts within agreed timelines should trigger a joint review mechanism, facilitated by WHO AFRO and Africa CDC, in collaboration with the affected Member States. These reviews will identify operational bottlenecks, clarify responsibilities, and agree on corrective actions to strengthen cross-border surveillance and information exchange.

7. Accountability and review mechanisms

Governance beyond emergency activation is reinforced through regular accountability processes, including:

- Monthly national surveillance performance reviews.
- Quarterly regional or continental surveillance coordination calls.
- Annual joint WHO–Africa CDC reviews of mpox surveillance performance, integration progress, and lessons learned.

Findings from these reviews should inform:

- Targeted technical assistance,
- Partner support and resource allocation,
- Updates to surveillance tools, thresholds, and guidance.

APPENDICES

Annex 1: Threshold Criteria for Mpox Endemicity Classification – Case Study from the Democratic Republic of Congo (DRC)

Establishing clear criteria for determining the endemicity status of Mpox at subnational levels is critical for tailoring surveillance strategies, resource allocation, and outbreak response. In countries like the Democratic Republic of Congo, where Mpox has been historically present, delineating districts into *endemic* and *non-endemic* zones ensures that surveillance efforts are prioritized effectively.

1. Operational definition of endemicity

In the DRC context, a health zone (district equivalent) is classified as *endemic* for Mpox if it meets one or more of the following criteria based on surveillance data trends over a two-year reference period:

- **Recurrent Mpox Detection**: The zone reported confirmed Mpox cases in *at least two different calendar years* over the last five years.
- **Sustained Transmission**: A zone with confirmed Mpox cases for *at least 6 cumulative months* (not necessarily continuous) within the past 24 months.
- **Geographic Persistence**: Health zones bordered by ≥3 other endemic health zones, indicating probable local maintenance of transmission.
- **Zoonotic Confirmation**: Verified zoonotic transmission chains or spillover from animal reservoirs in the zone.

Zones not meeting any of the above criteria are considered *non-endemic* and require a different surveillance posture.

2. Threshold determination process

The threshold-setting exercise in DRC followed a systematic approach:

- **Data Review**: Compilation of line-listed Mpox surveillance data from 2020 to 2024, covering confirmed cases by health zone, with attention to seasonality, case density, and time trends.
- **Zonal Classification**: Zones were mapped and categorized using both quantitative case frequency thresholds and expert epidemiological judgment.
- **Validation**: Thresholds and classifications were validated in a joint technical workshop involving MOH, WHO, and partners, incorporating local knowledge and transmission history.

3. Methodological approach

Using five years of case-based surveillance data (2018–2022), the DRC surveillance team assessed:

- **Confirmed case trends** per health zone,
- **Persistence and recurrence of cases** over multiple years,
- **Seasonality and reporting frequency**, and
- Presence of **animal reservoirs** or documented zoonotic events.

Table 9: The DRC categories of endemicity

Endemicity Level	Definition	Criteria
Highly Endemic	Zones with sustained mpox detection and frequent recurrence	≥3 years with confirmed mpox cases in the last 5 years AND ≥1 outbreak with ≥10 confirmed cases
Moderately Endemic	Zones with intermittent but recurring mpox transmission	≥2 years with confirmed cases in the last 5 years, with ≤9 cases per outbreak
Non-Endemic	Zones with rare or no mpox cases reported in recent years	≤1 confirmed case in the past 5 years OR zero confirmed cases

Source: Estimation-du-seuil-dendemicite-de-la-Mpox-en-République-Démocratique-du-Congo.pdf

4. Application of the thresholds

Applying these thresholds:

- 54 out of 519 health zones were categorized as highly endemic, notably in Équateur, Tshuapa, Sankuru, and Maniema.
- 90 zones were classified as moderately endemic with sporadic but repeated outbreaks.
- The remaining 375 zones were considered non-endemic.

5. Implications for surveillance strategy

Table 10: The DRC Proposed interventions based on classification

Surveillance Focus Area	Highly Endemic Zones	Non-Endemic Zones
Case Detection & Reporting	Routine active case search, integrate into IDSR weekly reports	Enhanced event-based surveillance, alert-triggered investigation
Laboratory Testing	Targeted sentinel site confirmation and periodic genomic sequencing	All suspected cases tested at national lab
Community Engagement	Continuous community-based surveillance and education	Targeted awareness campaigns following alerts or suspected cases
Outbreak Response Readiness	Pre-positioned RRTs and IPC supplies	Rapid deployment mechanisms for containment

6. Surveillance Implications

The endemicity classification impacts both **routine surveillance intensity** and **thresholds for action**.

Table 11: DRC Alert thresholds and response actions

Zone Classification	Surveillance Focus	Alert Threshold	Response Activation
Endemic zone	Enhanced routine surveillance, sentinel animal surveillance, periodic community-based surveillance	≥2x increase in weekly cases vs 4-week average OR New clade introduced	Review vaccination needs, genomic sequencing, assess IPC gaps
Non-endemic zone	EBS alerts, travel-linked case detection, POE monitoring	≥1 confirmed case with no travel history OR Cluster of ≥2 suspected rash illness with epidemiologic link	Full outbreak investigation, contact tracing, alert WHO IMST

7. Key Lessons from DRC Experience

- Longitudinal data analysis is essential to determine true persistence versus repeated reintroductions.
- Endemicity status is dynamic and should be reassessed every 2–3 years or during major outbreaks.
- Integration of One Health surveillance (wildlife, bushmeat trade, human-animal contact) is key in suspected spillover zones.

Annex 2: Mpox surveillance tools

Data collection, analysis, and reporting

Effective Mpox surveillance requires a standardized framework for data collection, management, analysis, and reporting.
The use of harmonized tools and digital platforms enables comparability across Member States, improves data quality, and ensures timely dissemination of information to guide public health action at national and continental levels.

a. Standardized data collection tools

- **Case Report Forms (CRFs):**
  Structured templates capturing demographic, clinical, laboratory, and epidemiological information for each suspected or confirmed case.
  WHO and Africa CDC have developed standardized CRFs to ensure harmonization; Ministries of Health should adapt these forms to national contexts while maintaining the core data elements.

- **Minimum data sets (MDS):**
  A defined list of key variables required for case-based and aggregate reporting.
  These include identifiers, location, date of onset, case classification, outcome, and laboratory confirmation status.
  Use of MDS ensures consistency and reduces reporting burden across surveillance levels.

- **Communityand event-based reporting tools:**
  Simplified forms and mobile applications for community health workers (CHWs), animal health officers, and Points of Entry (PoE) personnel to capture alerts and rumors in real time.

b. Digital data entry and management platforms

- DHIS-2 Tracker:
  The recommended digital platform for Mpox case-based surveillance, integrated within the IDSR system and interoperable with laboratory and PoE modules.
  It allows online and offline data entry, real-time validation, and national-to-continental data transmission.

- Laboratory Information Management Systems (LIMS):
  Used to manage sample tracking, test results, and genomic data; should be linked electronically to DHIS2 and IDSR databases.

- Integrated Databases and Interoperability:
  Countries are encouraged to maintain unified national databases that consolidate data from health facilities, laboratories, animal health surveillance, and PoEs.
  Data integration should follow standardized exchange protocols (e.g., API or HL7) and ensure real-time flow of information across sectors.

- Data Security and Confidentiality:
  All electronic data systems must implement strong data governance measures, including user access control, encryption, and compliance with national data protection regulations.

c. Data analysis and interpretation

- **Epidemiological analysis:**
  Routine generation of descriptive and analytical statistics (e.g., incidence, positivity rate, CFR, and case-to-contact ratio).
  Data should be disaggregated by time, place, and person, and analyzed to detect unusual increases, geographic clustering, or changes in transmission patterns.

- **Advanced analytics:**
  Countries are encouraged to apply statistical modeling and geographic information system (GIS) tools for hotspot mapping, forecasting, and risk assessment.
  Integration of genomic sequencing results supports tracking of clade circulation and virus evolution.

- **Performance monitoring:**
  Automated dashboards should calculate key surveillance indicators such as notification timeliness, laboratory turnaround time (TAT), and completeness to assess system performance and guide corrective action.

d. Reporting and visualization tools

- **Standardized reporting protocols:**
  Clear national guidance should define the frequency and format of Mpox reporting (e.g., weekly IDSR updates, monthly summaries, and quarterly reviews). (Reference to the WHO Surveillance, case investigation and contact tracing for mpox: interim guidance, 27 November 2024 available at https://www.who.int/publications/i/item/B09169#:~:text=Overview,as%20they%20are%20symptom%2Dfree.)
  Data flows must align with the national health information system and regional reporting timelines.

- **Interactive dashboards:**
  Digital dashboards enable real-time visualization of alerts, cases, test results, and geographic distribution.
  These dashboards support rapid decision-making at all levels and feed data into the joint Africa CDC WHO continental Mpox dashboard **f**or regional analysis.

- **Feedback and Information Sharing:**
  Routine dissemination of analytical reports and performance reviews to subnational levels, laboratories, and partners ensures transparency, strengthens accountability, and encourages the use of data for public health action.

Annex 3: Key surveillance areas and partner support actions

Surveillance area	Key actions to support ministries of health
Policy, coordination & technical guidance	• Provide technical guidance on mpox surveillance policy formulation and strategic planning. • Support the development, review, and dissemination of surveillance protocols, case definitions, and standard operating procedures. • Facilitate multisectoral coordination platforms and response taskforces. • Promote alignment with International Health Regulations and regional frameworks.
Surveillance operations	• Assist in the design and operationalization of mpox case investigation forms, line lists, contact tracing tools, and early warning systems. • Provide technical support for outbreak investigations and epidemiological analysis. • Strengthen alert verification, reporting channels, and rapid response mechanisms at national and subnational levels.
Community-Based and Event-Based Surveillance (CBS & EBS)	• Support the development of community case definitions and job aids for frontline workers. • Provide training, supervision, and incentives for community health workers and surveillance volunteers. • Design and implement EBS platforms that integrate signals from communities, media monitoring, and health facilities. • Strengthen linkages between CBS/EBS and national reporting systems.
Laboratory & genomic surveillance	• Supply equipment, reagents, and testing kits for PCR diagnosis and sequencing. • Provide training on biosafety, sample collection, transport, and testing protocols. • Establish regional specimen referral networks and genomic surveillance collaboration platforms. • Strengthen lab-based data reporting and integration with surveillance dashboards.
Cross-border surveillance	• Develop joint cross-border surveillance plans and information sharing agreements. • Enhance surveillance and screening at Points of Entry (PoEs) with standardized tools. • Facilitate human and animal mobility mapping to inform preparedness. • Provide logistic and ICT support for sample transport and data exchange across countries.

Digital surveillance & data management	• Design or enhance real-time data reporting systems (e.g., DHIS2 modules, mobile apps). • Train surveillance officers on digital tools, data entry, validation, analysis, and interpretation. • Integrate surveillance data across platforms and improve interoperability. • Support development of analytics dashboards for decision-making.
One Health & zoonotic surveillance	• Provide technical guidance on integrating animal health surveillance with human health systems. • Support capacity building for joint investigations and data sharing between veterinary and human health sectors. • Facilitate mapping of zoonotic reservoirs and potential spillover zones. • Promote One Health governance mechanisms and joint simulation exercises.
Human resources & capacity building	• Conduct training needs assessments and develop national capacity-building plans. • Offer cascade training on surveillance tools, outbreak response, data use, and leadership. • Establish mentorship, supervision, and peer-learning networks for surveillance officers. • Support human resource surge capacity during outbreaks through rosters and deployments.
Monitoring, evaluation & sustainability	• Assist in developing national M&E frameworks for mpox surveillance. Define and track performance indicators (KPIs) linked to surveillance goals. • Conduct after-action reviews, data quality audits, and joint evaluations. • Support sustainability planning, resource mobilization, and transition into routine surveillance.

Annex 4: Summary matrix of mpox surveillance strategies by epidemiological category

Category / Approach	Primary Surveillance Focus	Core Strategic Actions	Expected Impact / Outcomes
1. Endemic Countries *(Sustained high-intensity surveillance)*	Continuous detection of zoonotic and human transmission; integration of One Health and IDSR systems for sustained response.	• Conduct active case search (ACS) and event-based surveillance (EBS) in rural, forest-adjacent, and urban hotspots. • Deploy community and animal health workers for joint human–animal case finding. • Strengthen contact tracing, lab testing, and genomic sequencing (≥5 % coverage). • Implement cross-border and PoE surveillance with joint investigation platforms. • Integrate One Health data sharing and environmental/wastewater monitoring.Maintain surveillance in humanitarian and insecure settings. • Ensure domestic financing and predictable partner support.	• Early detection of outbreaks and zoonotic spillovers. • Continuous monitoring of transmission dynamics and clade shifts. • Rapid containment of local clusters. • Reduced case fatality and cross-border spread. • Institutionalized, sustainable Mpox surveillance embedded in IDSR and One Health.
2. Non-Endemic Countries with Active Outbreaks *(Rapid containment and transition to routine monitoring)*	Early identification and interruption of introduced transmission chains.	• Implement rapid EBS/CBS activation in facilities and communities. • Train HCWs on case definition, differential diagnosis, and alert verification. • Deploy comprehensive contact tracing and quarantine protocols. • Strengthen PoE screening and cross-border notification. • Maintain real-time outbreak database integrated with IDSR. • Conduct baseline performance assessment by week 4 and follow-up at weeks 8 & 12. • Integrate genomic sequencing for clade confirmation and epidemiologic linkage.	• Imported and local cases detected within 48 hours. • ≥ 90 % of contacts traced and monitored. • Local transmission contained within two generations. • Improved national coordination and partner alignment. • Documented reduction in detection-to-response timelines.

3. Non-Endemic Countries with No or Controlled Local Transmission *(Readiness and preventive integration)*	Sustained vigilance to detect imported cases and prevent re-introduction.	• Maintain Mpox on national epidemic-prone disease watchlist with zero-reporting. • Integrate Mpox signals into PoE and IDSR early-warning systems. • Conduct semi-annual readiness assessments and simulation exercises. • Retain or access PCR and sequencing capacity through referral networks. • Establish MoUs for data exchange with endemic neighbors. • Conduct periodic refresher training and awareness campaigns. • Publish monthly zero-report summaries and readiness briefs.	• Continuous national readiness demonstrated. • Imported cases detected and managed promptly. • No sustained local transmission. • Strengthened cross-border coordination and information flow. • Maintained public and political awareness of Mpox risks.

Annex 5: Glossary of terms

Term	Definition (as used in the Strategy)
Active Case Search (ACS)	Proactive, targeted search for suspected/confirmed cases in facilities, communities, and specific high-risk settings.
Alert	Any signal (clinical, community, media, hotline, PoE, animal event) that may indicate mpox and requires verification.
Baseline Assessment	Measurement of existing surveillance performance (timeliness, completeness, testing, contact follow-up) against which improvement is tracked.
Case-based Surveillance	Individual-level data capture for each case (epidemiology, clinical, lab, contacts) using standardized tools (e.g., DHIS2 Tracker).
Case Definition	Standardized clinical/epidemiological/laboratory criteria to classify suspected, probable, and confirmed mpox cases.
Case Investigation	Field verification and detailed data collection, including exposure history and linkage to contacts and laboratory sampling.
Cluster	Two or more epidemiologically linked cases in time and place suggesting common exposure or person-to-person transmission.
Contact	A person with exposure to a confirmed/probable case likely to result in infection; followed for 21 days.
Contact Listing & Tracing	Systematic identification, listing, and active daily follow-up of contacts to interrupt transmission.
Data Interoperability	Seamless, standards-based data exchange across systems (e.g., DHIS2, LIS/LIMS, SIMAR, PoE databases).
Digital Dashboard	Real-time visualization of alerts, cases, lab results, KPIs, and micro-risk maps for decision-making.
Epidemiological Threshold	A predefined quantitative/qualitative level (e.g., rise in cases/positivity, HCW infections) that triggers specific response actions.
Environmental/Wastewater Surveillance	Testing environmental samples (e.g., sewage) to detect community circulation and support early warning.
Event-Based Surveillance (EBS)	Structured capture and rapid triage of unstructured signals (media, social, hotlines, community rumors).
Genomic Surveillance	Sequencing and analysis to identify clades, track introductions, and monitor spread/evolution.
Hotspot	Geographic or social setting with elevated risk of transmission, requiring intensified detection and RCCE.
Incident Management (IM/IMS/IMST)	Structured command system to coordinate outbreak operations across technical pillars.
Indicator-Based Surveillance (IBS)	Routine, structured reporting (e.g., weekly IDSR) used to monitor trends and thresholds.
Infection Prevention and Control (IPC)	Policies and practices (e.g., PPE, triage, isolation) to prevent healthcare-associated transmission.
Intra-Action Review (IAR)	Real-time review during an ongoing response to improve performance and correct course.
Key Performance Indicators (KPIs)	Agreed metrics to track surveillance performance (e.g., onset→notification, sampling, TAT, contact follow-up).

Laboratory Turnaround Time (TAT)	Time from lab receipt of specimen to result release; a core timeliness KPI.
Line List	Individual-level tabulation of cases or contacts used for analysis and linkage (epi, lab, tracing).
Micro-risk Mapping	GIS-supported, fine-scale mapping of risk to target case-finding and RCCE.
Minimum Data Set (MDS)	Required core variables for all case/alert records to ensure comparability and completeness.
Mpox	The disease caused by MPXV; term used throughout in preference to "monkeypox."
One Health	Integrated, multisectoral approach linking human, animal, and environmental health for prevention, detection, and response.
Points of Entry (PoE)	Airports, seaports, and ground crossings applying screening, triage, referral, and data exchange.
Rapid Response Team (RRT)	Multidisciplinary team ready for rapid deployment to investigate and support response.
Resurgence Threshold	Composite criteria (epidemiology, positivity, spread, severity/system pressure, system risk) signaling escalating transmission requiring surge measures.
Risk Communication & Community Engagement (RCCE)	Two-way information and engagement processes to build trust, counter misinformation, and support public health action.
Routine (Zero-) Reporting	Regular reporting—including "zero reports"—to document absence/presence of suspected cases and maintain vigilance.
Standard Operating Procedure (SOP)	Agreed stepwise instructions for consistent execution of surveillance/lab/IPC processes.
Surge Capacity	Ability to rapidly scale staffing, supplies, diagnostics, and operations when thresholds are crossed.
Terms of Reference (ToR)	Roles and responsibilities for committees, TWGs, or cross-border platforms.
Technical Working Group (TWG)	Expert group providing coordination and technical oversight for a specific thematic area.

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