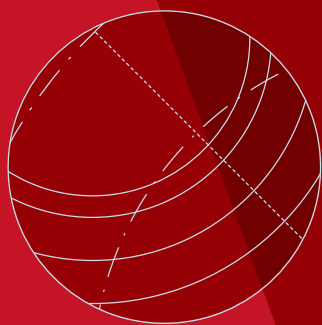
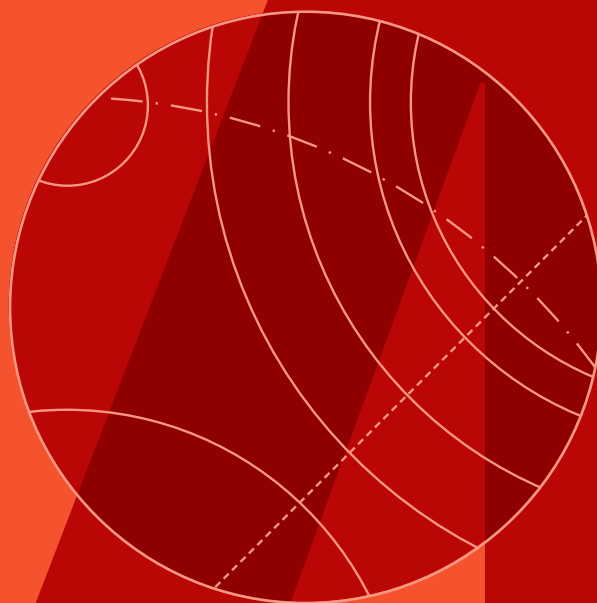
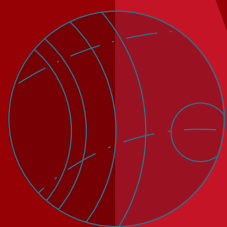




MEASLES OUTBREAK STRATEGIC FRAMEWORK 2026–2030



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Executive Summary

Context

Measles, a disease targeted for elimination in all six WHO regions, is re-emerging as a serious threat, with outbreaks increasing in frequency worldwide. **The number of countries with large or disruptive measles outbreaks nearly doubled from 33 in 2022 to 62 in 2025.**¹ With stalled immunization coverage and rising numbers of “zero-dose” children, outbreaks are becoming a protracted emergency in many settings rather than isolated events. These immunity gaps are often concentrated among populations facing social, geographic, economic, and gender-related barriers to vaccination and timely access to care

The **Measles Outbreak Strategic Framework (MOSF) 2026–2030** sets the partnership’s strategic direction for preventing, preparing for, responding to, and recovering from measles outbreaks over the next five years. Building on the **Measles Outbreak Strategic Response Plan (MOSRP) 2021–2023**, the framework reflects a shift from a predominantly reactive emergency response model toward **sustained, integrated outbreak management embedded within stronger immunization systems**. It is also aligned with the partnership’s Measles and Rubella Strategic Framework 2021–2030 (MRSF) and the global **Immunization Agenda 2030 (IA2030)**.

MOSF is designed to serve as a valuable guide **for global and regional partners** engaged in measles outbreak prevention, detection and response, including donors, programme managers, technical agencies, and implementing partners. It shall help **identify priority areas for action**, guide policy dialogue and advocacy, as well as inform resource mobilization and partner support along **a common set of objectives**. The MOSF **also aims to provide national-level decision-makers** a framework to situate national efforts within broader global priorities and support **coordinated decision-making** on prevention, preparedness, and outbreak response, all with the ultimate goal of minimizing **measles-related morbidity and mortality from outbreaks by 2030**, particularly among populations at greatest risk of being missed or underserved.

1 WHO, Measles and Rubella Global Updates, August 2025.

Key Features of the Updated Measles Outbreak Strategic Framework (2026-2030)

The MOSF retains the six pillars of the previous MOSRP – **Coordination, Prevention, Preparedness, Response, Recovery, Equity** – while reframing them to reflect the evolving nature of measles outbreak risk and response over the next five years.

It is a shift from a primarily reactive, emergency-focused model toward a more **proactive and system-strengthening approach** to outbreak management. At a **strategic level, it articulates priority directions for each pillar to guide policy dialogue, advocacy, and alignment of partner efforts across the outbreak cycle.** Collectively, the pillars emphasize:

- » stronger coordination across partners and sectors
- » prevention of outbreaks through routine immunization and targeted strategies that address persistent barriers to reaching missed children and underserved communities
- » preparedness planning in high-risk settings
- » timely and effective response when outbreaks occur
- » recovery efforts that strengthen systems and reduce future risk
- » continued focus on equity to ensure that vulnerable and underserved populations are prioritized, including through attention to gender-related barriers that affect access to vaccination, information, and care.

Progress under the strategy will be assessed through a high-level monitoring and learning approach using suggested indicators that draw on existing data sources and partnership mechanisms to track trends in outbreak risk, response timeliness, and coverage among priority populations and, where feasible, barriers affecting equitable access, including those related to gender.

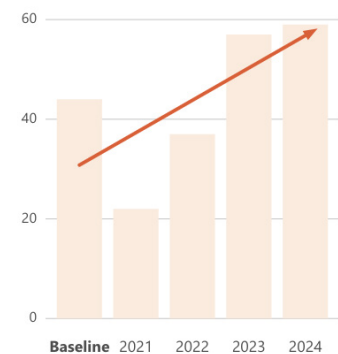
Introduction & Context

Measles, a disease targeted for elimination in all six WHO regions, remains one of the most contagious and deadly vaccine-preventable diseases. While small and self-limited outbreaks can occur even after elimination, in recent years outbreaks have become larger, more frequent, and harder to control. The number of countries experiencing significant outbreaks nearly doubled from 33 in 2022 to 62 in 2025, fueled by stalled immunization progress and a growing population of “zero-dose” children.² These immunity gaps often reflect not only health system weaknesses, but also social and gender-related barriers that affect whether children are reached through vaccination services in time.

Notably, Middle Income Countries (MICs) have shown a concerning rise, with the number experiencing large or disruptive outbreaks increasing from **18 in 2022 to 32 in 2024**. At the same time, outbreaks in high-income countries are increasingly straining health systems both operationally and financially. In several regions, large and protracted outbreaks have already caused countries to lose, or risk losing, their measles elimination status. Low Income countries (LICs) also continue to show persistent outbreaks, **with each year since 2022 seeing at least 15 large or disruptive outbreaks**. These trends highlight how measles outbreaks have become a test of health system resilience, exposing weaknesses in routine immunization coverage, surveillance, and preparedness.³ They also underscore the importance of understanding which populations are being missed, why they are being missed, and how factors such as poverty, displacement, gender norms, caregiving roles, and access constraints shape outbreak risk.

Measles

Number of large or disruptive outbreaks increasing



At the start of the decade, the **Measles & Rubella Partnership (M&RP)** developed the **Measles Outbreak Strategic Response Plan (MOSRP)** for 2021–2023, later updated for 2023–2025. These plans established important operational foundations for measles outbreak management, including stronger partner coordination, faster access to outbreak financing through the **Outbreak Response Fund (ORF)**, and improved accountability for outbreak detection and response.

However, the scale and persistence of recent outbreaks demonstrate that a broader and more strategic approach is now required. The **Measles Outbreak Strategic Framework (MOSF) 2026–2030** builds on these earlier efforts by shifting from establishing response processes toward **strengthening prevention, preparedness, and long-term resilience within immunization systems**. It updates and extends the earlier framework to reflect newer realities and challenges on cross-border outbreaks, funding needs, and immunity gaps in fragile and marginalized populations, including barriers related to gender, mobility, trust, and access to services.

² WHO, Measles and Rubella Global Updates, August 2025.

³ IA2030 Scorecard for Immunization Agenda 2030

The MOSF retains the six original pillars of the MOSRP – Coordination, Prevention, Preparedness, Response, Recovery, and Equity – while refining them to reflect evolving outbreak dynamics, growing immunity gaps, and the need for faster and more coordinated responses. It also emphasizes stronger integration with broader immunization and health system goals under the **Immunization Agenda 2030 (IA2030)** and the **Measles and Rubella Strategic Framework (MRSF) 2021–2030**.

In doing so, the **MOSF 2026–2030 represents the next phase of measles outbreak management**: moving beyond reactive emergency response toward a **proactive, system-strengthening approach** that prioritizes prevention, rapid containment of outbreaks, and protection of vulnerable populations.

Aim & Objectives

Building on this shift, the framework sets out a clear aim and three overarching objectives to guide coordinated action by global, regional, and national partners over the coming five years.

Aim

To minimize measles-related morbidity and mortality from outbreaks by 2030, through strengthened prevention, preparedness, rapid response, and recovery efforts that reinforce immunization systems and support progress towards measles elimination across regions.

Objectives

To achieve the above aim, the Measles Outbreak Strategy 2030 focuses on three primary objectives:

1. STRENGTHEN GLOBAL, REGIONAL, AND NATIONAL CAPACITIES FOR OUTBREAK PREVENTION, PREPAREDNESS, AND MANAGEMENT

Ensure countries can prevent, detect, respond to, and recover from measles outbreaks effectively. These capacities include robust surveillance systems with disaggregated data, preparedness plans, skilled workforce, laboratory networks, coordination platforms, and sustainable financing mechanisms for outbreaks. Given the sporadic nature of outbreaks in many settings, strengthening capacity and facilitating learning across countries and regions remain critical.

2. LEVERAGE OUTBREAK RESPONSE TO IMPROVE IMMUNIZATION SYSTEMS

Use outbreak response as an opportunity to identify gaps in immunization systems and populations not reached by routine services. Outbreak investigations and after-action reviews should identify root causes – including service delivery gaps, barriers to access, and factors influencing vaccine hesitancy – and translate these findings into specific, locally-feasible corrective actions. Lessons from outbreaks should inform improvements to routine immunization, catch-up vaccination, and broader system strengthening to reduce future outbreak risk.

3. ENSURE EQUITABLE ACCESS AND PROTECTION FOR HARD-TO-REACH POPULATIONS

Close immunity gaps in marginalized groups by tailoring strategies for populations in conflict zones, fragile settings, remote areas, urban slums, migrant and nomadic communities, and others with low coverage, with attention to caregiver barriers related to mobility, safety, time, decision-making and access to acceptable care.

Strategic Framework (2026-2030)

Aim

Minimize measles-related morbidity and mortality due to outbreaks by 2030, through strengthened prevention, preparedness, rapid response, and health system improvements

Objectives

Strengthen national, regional, and global capacities for outbreak management

Leverage outbreak preparedness and response to improve immunization systems

Ensure equitable access and protection for hard-to-reach populations





Strategic Pillars

 <p>1. Coordination Developing robust coordination mechanisms at global, regional, and national levels.</p>	 <p>2. Prevention Strengthening routine immunization and conducting preventive campaigns to close immunity gaps</p>	 <p>3. Preparedness Establishing and strengthening preparedness mechanisms (e.g., plans, capacities, and resources) that enable timely outbreak detection and response.</p>	 <p>4. Response Enabling a swift and effective response to save lives and contain the outbreak</p>	 <p>5. Recovery Leveraging investigations to restore and improve health services – and building greater health system resilience to prevent future crises</p>
 <p>6. Equity Reaching hard-to-reach populations that are typically left behind, including displaced people in conflict zones and fragile states, mobile and migrant communities, and other marginalized groups while addressing gender-related barriers.</p>				

Monitoring Evaluation & Learning

Tracking progress and ensuring accountability through regular monitoring, evaluation and learning of key indicators at key milestones

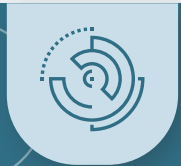
Guiding Principles

 <p>People-focused</p>	 <p>Country-owned</p>	 <p>Partnership-based</p>	 <p>Data-enabled</p>
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Strategic Pillars of the MOSF

PILLAR 1



Coordination

Effective measles outbreak control through 2030 requires strong coordination mechanisms at global, regional, and national levels. Measles outbreaks often involve multiple actors and rapid decision-making across surveillance, laboratory confirmation, vaccination campaigns, and clinical response. Ensuring that these actors operate through clear coordination structures and shared operational frameworks is therefore central to effective outbreak management.

At the global level, coordination is anchored by the Measles & Rubella Partnership (M&RP) – an alliance including the American Red Cross, the Gates Foundation, Gavi, the United Nations Foundation, the U.S. Centers for Disease Control and Prevention (US CDC), UNICEF, and the World Health Organization. M&RP provides strategic leadership, technical guidance, and pooled resources to support outbreak preparedness and response. One key mechanism is the Measles & Rubella Outbreak Response Fund (ORF), which enables rapid financing and vaccine mobilization for outbreak response activities in eligible countries.

Another critical component of global coordination is the Global Measles and Rubella Laboratory Network (GMRLN), which connects laboratories across countries and regions to support rapid confirmation of measles cases and sharing of virological data. This laboratory network enables countries to detect outbreaks quickly, monitor virus transmission patterns, and coordinate responses when outbreaks spread across borders.

At the regional level, coordination comes through WHO regional offices in collaboration with partner agencies, including UNICEF, US CDC, and regional working groups within the M&RP. These partners support countries in outbreak prevention, preparedness, response, and recovery while aligning efforts with broader immunization goals under IA2030 and the Measles–Rubella Strategic Framework (2021–2030).

At the national level, measles outbreak coordination should be built on existing public health emergency management structures, including National Public Health Institutes (NPHIs), Public Health Emergency Operations Centers (PHEOCs), or other national emergency coordination platforms. Within these systems, measles outbreaks are typically managed through incident management or emergency response structures that bring together epidemiology, laboratory, immunization, logistics, communications, and partner coordination functions. Integrating measles outbreak management into these existing systems helps avoid parallel structures while ensuring that preparedness and response activities are coordinated efficiently across government agencies and partners.

Effective measles outbreak control through 2030 requires strong coordination mechanisms at global, regional, and national levels.



Strong coordination across these global, regional, and national platforms ensures that information, expertise, and resources can be mobilized rapidly. Measles outbreaks often signal broader vulnerabilities in immunization systems, and coordination with other disease initiatives can help strengthen outbreak detection and response. Existing infrastructure, such as surveillance personnel, emergency operations centers, and social mobilization networks developed through polio eradication and other disease control initiatives, can support measles and other vaccine-preventable disease outbreak responses. Joint planning with programmes such as polio (GPEI), cholera (GTFCC), and yellow fever (EYE) can enable more integrated surveillance and vaccination responses where appropriate. By aligning with IA2030 and partnering across initiatives, the strategy promotes a multi-sectoral and multi-disease approach to outbreak preparedness and response.

DEEP DIVE

GMRLN and National outbreak coordination mechanisms

Effective coordination relies on established technical and operational platforms that enable rapid information sharing and joint response across countries and partners.

The Global Measles and Rubella Laboratory Network (GMRLN) links more than 700 laboratories worldwide, enabling rapid laboratory confirmation of suspected measles cases and genotyping of circulating viruses.¹ This system ensures that virological data—such as identification of measles strains and transmission chains—can be shared quickly across countries and regions. Rapid confirmation and data sharing allow neighboring countries to coordinate responses when outbreaks spread across borders. Accreditation and quality assurance through the network ensures that results are reliable and trustworthy.

During cross-border or multi-country outbreaks, coordination may also occur through international mechanisms under the International Health Regulations (IHR), which facilitate information exchange and international technical support. This can include the deployment of epidemiologists and response experts through networks such as the Global Outbreak Alert and Response Network (GOARN).

At the national level, outbreak response is typically coordinated through existing emergency management platforms, such as Public Health Emergency Operations Centers or National Public Health Institutes, which activate incident management teams during public health emergencies. These platforms convene relevant stakeholders, including Ministry of Health officials (EPI managers, disease control officers, Social and behavioral change officers), National Measles and Rubella Verification Committees, clinicians and laboratory experts, partner agencies (WHO, UNICEF, US-CDC, Red Cross/Crescent, NGOs), community leaders, and even non-health sectors like education or security if relevant.

During active outbreaks, the response pillars in the incident management team support continuous analysis and visualizations of surveillance data, planning of vaccination campaign logistics, coordination of risk communication, and management of clinical response and essential supplies. The aim is to jointly plan and manage preparedness and response activities. By bringing together technical expertise, operational resources, and community engagement, these platforms help ensure that outbreak responses are aligned, timely, and effective.

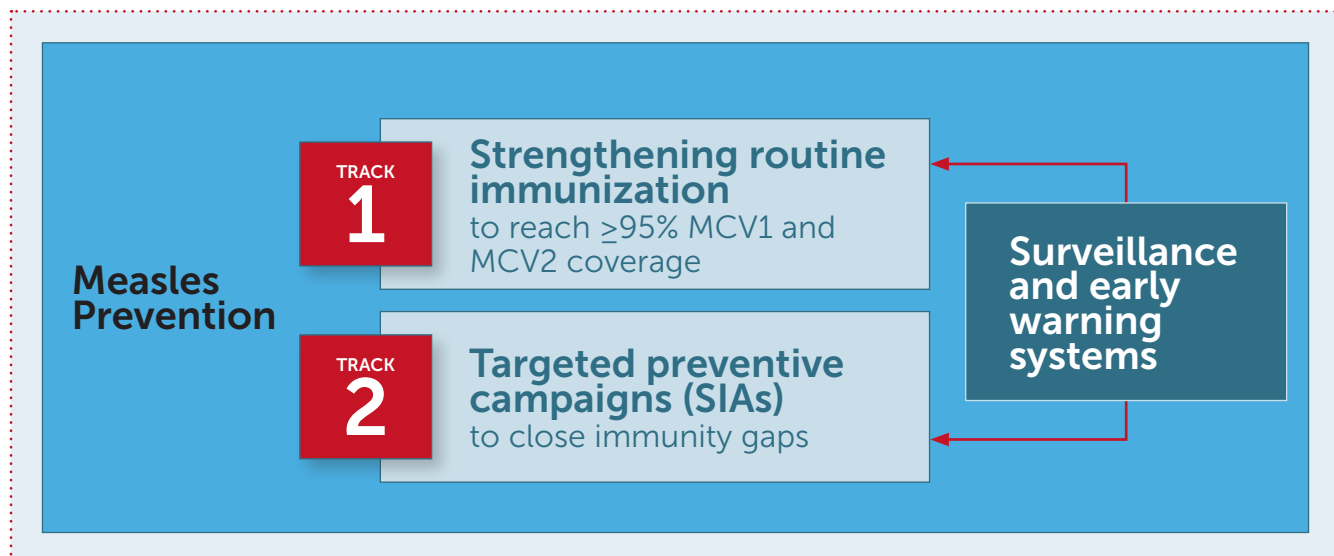
¹ Measles and Rubella Laboratory Network, 2018

PILLAR 2

Prevention



Preventing measles outbreaks is the top priority through 2030, centered on strengthening routine immunization and conducting targeted preventive campaigns to close immunity gaps. Measles is the most contagious human disease, requiring around 95% population immunity, achieved through vaccination with two doses of measles-containing vaccine (MCV1 and MCV2), to reliably prevent outbreaks.¹ Therefore, the cornerstone of prevention is achieving and sustaining $\geq 95\%$ vaccination coverage with two doses of MCV in every community. Countries are working to expand and strengthen their Expanded Programme on Immunization (EPI) to reach this goal.



Because measles coverage is often considered an early warning sign for broader immunization programme performance, investments aimed at reaching 95% coverage with two doses of measles vaccine also contribute to strengthening primary health care systems. High routine coverage not only prevents measles outbreaks but also indicates a robust immunization system capable of protecting children against multiple vaccine-preventable diseases.

Where routine immunization still leaves immunity gaps, preventive Supplementary Immunization Activities (SIAs) serve as a critical stop gap measure. These periodic mass vaccination campaigns help “catch up” unvaccinated children, revaccinate previously vaccinated children, and boost population immunity before an outbreak occurs. While the target age range is typically children from 9 – 59 months of age, it can include younger or older children based on surveillance data and immunity profiles.

1 Measles Vaccines: WHO Position Paper, Weekly Epidemiological Record 92, no. 17 (2017): 205–27.

Under the 2021–2023 MOSRP, WHO and partners identified high-risk countries and subnational areas – often referred to as “hotspots” – that should be prioritized for outbreak risk mitigation efforts alongside scheduled preventive measles or measles-rubella campaigns. Building on this approach, the MOSF 2026–2030 recommends using surveillance data (measles incidence, population susceptibility modeling), immunity profiles (e.g. immunity gaps in certain age groups or communities), and health system weaknesses to guide when and where preventive campaigns are needed. While some countries will conduct nationwide campaigns, others with generally high coverage may implement targeted campaigns in specific high-risk communities to prevent outbreaks. For example, countries with generally high (>90%) coverage may target campaigns in large urban slums, religious communities, or remote rural communities with chronically low routine coverage to avert outbreaks.

Preventive efforts also focus on reaching populations that remain underserved by routine immunization systems. Under the IA2030 equity agenda, health ministries are increasingly mapping under-immunized and “zero-dose” children – those who have never received any routine vaccines – and implementing outreach strategies tailored to reach them. These populations often live in remote rural areas, urban informal settlements, conflict-affected regions, or among migrant and nomadic communities. Women caregivers in these settings face particular challenges due to safety concerns, mobility restrictions, limited decision-making power, time poverty, and resource constraints.

DEEP DIVE

Closing immunity gaps to measles

Measles outbreak prevention hinges on two main fronts: (a) achieving high routine immunization coverage ($\geq 95\%$ with MCV1 and MCV2) through system strengthening and innovative outreach; and (b) strategically “filling immunity gaps” with supplementary campaigns or targeted initiatives wherever coverage is suboptimal and large numbers of susceptible children accumulate.

Strengthening routine immunization includes introducing a routine second dose (MCV2) if not already in the schedule and extending vaccination services to every corner of the country. This also requires addressing gender-related barriers that affect whether children are brought or vaccination and whether caregivers can access services, including constraints related to decision-making, mobility, time, and access to information or resources. Countries have applied different approaches to boost coverage, including

- » extending clinic hours and outreach sessions
- » systematically removing age limits to catch up older children with missed routine immunization doses
- » checking vaccination status at school entry and providing missed doses
- » developing auxiliary vaccination schedules guiding catch-up for children with missed vaccine doses
- » deploying mobile vaccination teams to remote villages
- » deploying female health workers and volunteers to reach caregivers with limited mobility or access

- » integrating immunization with other child health services (e.g., combining with nutrition or antenatal care visits)
- » community engagement to address vaccine hesitancy and misinformation

A practical example of this approach is the Reaching Every District (RED) strategy, which focuses on strengthening district-level immunization performance through better microplanning, outreach, supportive supervision, community linkages, use of data for action, and resource management. In settings with persistent gaps, countries may also use periodic intensification of routine immunization (PIRI) activities to rapidly improve coverage. Operational adaptations, such as the use of 5-dose measles vaccine vials, can further support delivery in outreach settings and help improve vaccine availability while reducing wastage concerns.

In some settings, additional outreach approaches may be needed to reach children outside the routine health system. Special vaccination posts at migrant camps, border crossings, religious centers, or minority community centers, as well as mobile clinics and periodic “child health days,” can help extend services where routine delivery is disrupted or populations are highly mobile.

By 2030, the aim is to have institutionalized these efforts such that measles outbreaks become rare and small. With strong preventive action, the terrible toll of measles can be averted before emergencies arise, making outbreaks the exception rather than the norm.

Surveillance and early warning systems

Strengthening surveillance and early warning systems is another important preventive measure to identify pockets of susceptibility before they ignite outbreaks (More details in Pillar 3: Preparedness). Monitoring immunity profiles, surveillance trends, and outbreak risks allows countries to identify pockets of susceptibility before they lead to outbreaks. If surveillance data or serological surveys show an increasing number of older children or young adults lacking immunity (perhaps due to historical gaps in vaccination), health authorities can preemptively extend immunization to those age groups. For instance, if a country discovers that many teenagers missed their second dose, then it might conduct a targeted campaign in high schools or universities to reach that cohort before an outbreak occurs.

In some settings, preventive vaccination activities have also been supported through partner financing mechanisms, where M&R Partners such as Gavi have committed resources. The MOSF also acknowledges the need to support preventive immunization in middle-income countries that are not Gavi-eligible – recognizing that many of these countries still harbor sizeable immunity gaps despite decent overall coverage. In practice, this has led to partner-funded catch-up vaccination activities in certain MICs to prevent outbreaks (e.g. using donor resources channeled through UN Foundation or CDC resources to assist a country in conducting an extra measles immunization round).

Overall, the M&RP remains committed to supporting efforts for timely and high-quality preventive activities, especially in settings with routine immunization challenges or in fragile contexts.

PILLAR 3

Preparedness



Five essential elements of measles outbreak preparedness



Even with strong preventive measures, measles outbreaks may still occur; robust preparedness and readiness are therefore essential. Preparedness means having plans, capacities, and resources in place ahead of time so that outbreaks can be detected early and controlled rapidly. Under the International Health Regulations (IHR 2005), countries are expected to maintain core capacities for epidemic preparedness and response, and these are directly relevant to measles outbreak management. For measles, preparedness requires several interrelated capacities. These include (but are not limited to):

- » Clear leadership and coordination structures for outbreak response
- » Written preparedness and response plans, including periodic assessments of preparedness across levels
- » Ability to analyse surveillance data and investigate suspected outbreaks
- » Sensitive surveillance and laboratory capacity, or access to reference laboratories, for rapid confirmation

- » Risk communication arrangements during outbreak detection and response that reach everyone effectively, taking into account different roles, information needs, and barriers to access
- » Contingency mechanisms for rapid access to vaccines, supplies, and financing

As highlighted earlier, strong **early warning and surveillance systems** are a crucial part of preparedness. Measles surveillance should ideally be case based, supported by laboratory confirmation, and sensitive enough to detect clusters or unusual increases in cases quickly. Health workers at every level must be regularly trained and supervised on standardized case definitions and reporting procedures so that suspected outbreaks can be recognized and flagged early. In higher-performing systems, surveillance can be complemented by event-based approaches, such as monitoring community reports, school absenteeism, or other informal signals, to help identify outbreaks in underserved areas that may be missed by routine reporting.

Preparedness also means that countries have PHEOC systems in place, procedures for standing up and closing incident management systems, and other agreed arrangements for how to respond when an outbreak signal arises, **including context-appropriate trigger thresholds or alert criteria for investigation and action**. In some settings, preparedness plans define alert thresholds or trigger points for investigation and action, for example, a single confirmed case in elimination settings, or clusters of suspected cases in higher-burden contexts. The specific thresholds may vary by epidemiological setting, but the principle remains the same: outbreaks should be recognized immediately they occur and acted on quickly enough to prevent further spread.

Another important aspect of preparedness is ensuring **readiness in logistics and financing**. Countries should either maintain, or be able to rapidly access, essential outbreak supplies such as measles-containing vaccines, auto-disable syringes, safety boxes, vitamin A, and surge cold chain capacity. They also need contingency financing arrangements or pre-approved mechanisms that allow outbreak response funds to be released quickly. Outbreaks demand rapid action, which can be hampered if funds are stuck in red tape. Countries are encouraged to set aside emergency funds or have pre-approved arrangements for quick disbursement of outbreak response funds.

Ultimately, preparedness is not only about having plans on paper, but also about testing whether systems work in practice. Simulation exercises, periodic readiness assessments, and preparedness reviews can help identify weaknesses in coordination, surveillance, logistics, and communication before a real outbreak occurs. In this way, **preparedness serves as the bridge between prevention and response**: it determines whether countries can move rapidly from early warning to effective action.

By 2030, the goal is for high-risk countries to institutionalize these preparedness capacities so that when an alert occurs, response systems can shift quickly from watchfulness to action.

DEEP DIVE

Preparedness plans, early-warning triggers, and readiness in practice

Many countries have developed measles-specific outbreak preparedness and response plans, often integrated into broader vaccine-preventable disease, immunization, or public health emergency plans. These plans help clarify roles and responsibilities (from rapid response teams, campaign organization, to media communications), identify coordination pathways, and define what systems and resources should already be in place before an outbreak occurs.

Preparedness plans may include a minimum set of readiness elements, such as coordination arrangements, surveillance and laboratory confirmation pathways, access to vaccines and essential supplies, contingency financing, and risk communication procedures. Guidance on outbreak funding procedures is available separately in the updated Outbreak Response Fund SOPs, along with a checklist for countries to follow along.

In some countries, they also define trigger thresholds that prompt investigation or response. For example, in elimination settings, even a single laboratory-confirmed case may trigger an alert, whereas in high-burden settings a cluster of cases above a certain threshold (for instance, 5 suspect cases in a week in a district) may trigger a response.

Preparedness can also be strengthened through simulation exercises and drills. Tabletop or field exercises allow countries to test whether coordination platforms function effectively, whether specimens and information can move quickly, whether vaccines and personnel can be mobilized on time, and whether communications systems are ready to support the response. Some regions have also used cross-border simulation exercises where neighbouring countries share outbreak risks.

At community level, preparedness may also benefit from complementary detection approaches. Community health workers, volunteers, teachers, or other trusted local actors can help identify suspected rash-fever illness clusters early and alert authorities, especially in areas where access to health services is limited.

Preparedness therefore means having the plan, the means, and the practice in place before an outbreak occurs. For more detailed operational guidance on outbreak preparedness and response, readers should consult the [Measles Outbreak Guide](#).¹

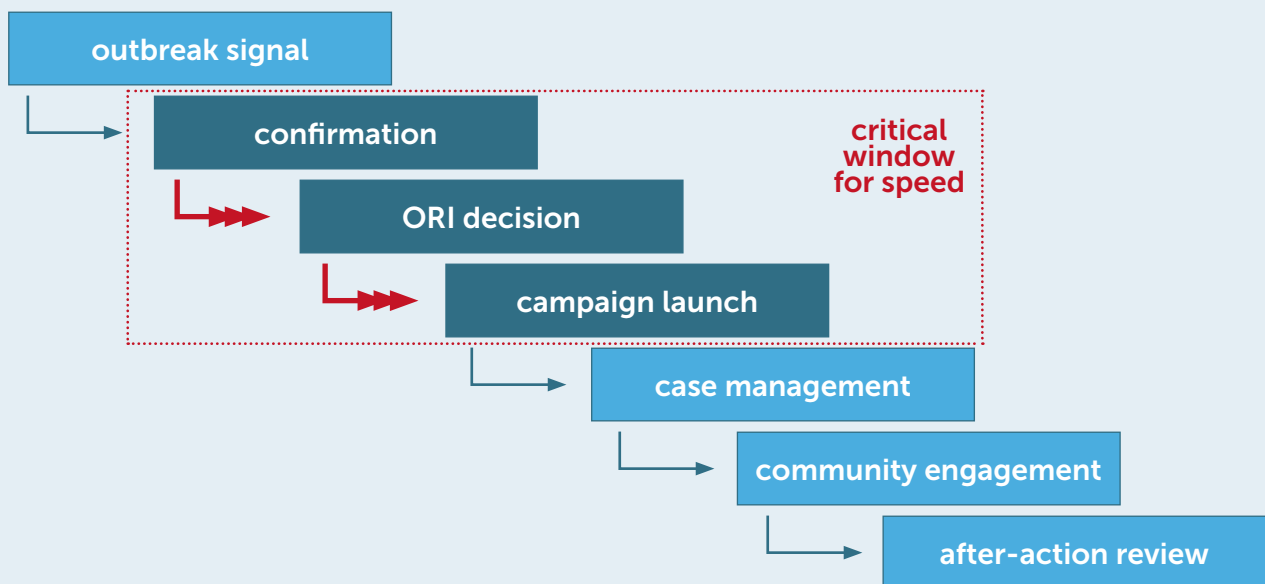
1 WHO Measles Outbreak Guide 2022

PILLAR 4

Response



Key steps of outbreak response



When a measles outbreak occurs, a swift and effective response is essential to save lives and limit transmission. Response begins with the rapid recognition and confirmation of an outbreak and activation of emergency response systems in the PHEOC, followed by coordinated action across the vaccination, clinical care, infection prevention and control, logistics, community engagement, and operational support. The speed and quality of this response often determine whether an outbreak is quickly contained or allowed to expand.

Rapid, local vaccination response remains the hallmark of measles outbreak control. Once an outbreak is confirmed or strongly suspected (where waiting for laboratory confirmation would delay action), local health authorities should aim to vaccinate susceptible populations as quickly as possible to create an immune buffer around cases and interrupt transmission. In most settings, this involves launching an **outbreak response immunization (ORI)** campaign targeting children in the affected geographic area and age range who are at risk. While outbreak response often focuses on children **6 to 59 months of age**, the target age range may extend to older children and adolescents depending on the epidemiology of the outbreak and the immunity profile of the affected population. Sometimes this age range can extend beyond 9 or 15 years of age in certain communities.

Achieving high coverage through ORI (typically >95%) within the shortest possible time is critical to halting transmission. This requires rapid decision-making, which in turn means that response effectiveness is closely linked to the preparedness capacities described in the previous pillar.

Financing and vaccine access are also essential components of effective response. The **Outbreak Response Fund (ORF)** is a critical enabling mechanism for outbreak vaccination in Gavi-eligible countries, which can support vaccine procurement and operational costs for emergency campaigns (including transport and social mobilization costs). In 2024 and 2025, Gavi channeled over US\$11 million each year into the M&RP's ORF to respond to outbreaks.⁴

At the same time, many **middle-income countries (MICs)** experiencing outbreaks are not eligible for Gavi support and may need to rely on national budgets, bilateral donor support, or partner financing mechanisms. In the past, MOSRP 2021-2023 highlighted the clear need to support MICs, and UNICEF was able to raise dedicated funding to help non-Gavi eligible countries respond to measles outbreaks. The MOSF therefore underscores the need for **expanded financial solidarity and timely emergency funding pathways**, so that no country is unable to respond rapidly because of funding constraints or bureaucratic delays. This includes continued advocacy for emergency grants and flexible response financing for settings facing substantial outbreak risk, including vulnerable MICs and fragile contexts. Furthermore, beginning in 2026, under Gavi's MICs Fragile and Humanitarian Policy, certain MICs facing acute vulnerability or crisis conditions will also be eligible to receive outbreak response (OBR) support.

Therefore, timely funding and vaccine supply – whether via ORF for low-income countries or emergency grants for MICs – ensures the window of opportunity to contain an outbreak is not lost due to bureaucracy.

In addition to vaccination, **clinical case management** is essential to reduce mortality. Measles can cause severe complications, including pneumonia, diarrhoea, and encephalitis, particularly in undernourished children and fragile settings. All health facilities in affected areas are advised to implement measles case management protocols per WHO guidelines. They need to be prepared not only to support vaccination efforts, but also to provide timely treatment, infection prevention and control, and referral for severe cases. Health facilities also should implement effective infection prevention and control procedures, including ensuring vaccination of staff, to limit nosocomial spread.

Community engagement and risk communication are another critical part of the immediate response. Once an outbreak is recognized, clear and timely communication is needed to inform caregivers and families about vaccination, symptoms, danger signs, and when to seek care, using approaches that reach women and men effectively. Working with trusted local actors, including community leaders, volunteers, women's organizations, and media, can improve uptake of vaccination and treatment, while also helping to address rumors, misinformation, and fear.

Response does not end when transmission declines. Once the acute phase subsides, an outbreak response review process should help bridge response and recovery. **After-Action Reviews (AARs)** can help identify what worked, where delays or bottlenecks occurred, and whether response efforts reached different groups equitably, including women, men, boys, girls, and underserved communities. **Root Cause Analyses (RCAs)** can leverage the outbreak to find the reasons why immunity gaps persisted, including gender-related barriers to access and care-seeking, and develop local solutions and plans. These lessons should inform national recovery plans, preparedness updates, and future preventive action.

⁴ See Gavi, Annual Progress Report 2024, p. 23. for 2024 stats, 2025 numbers yet to be published

DEEP DIVE

Clinical case management and immediate response measures

Clinical case management plays a central role in reducing measles mortality during outbreaks. While there is no specific antiviral treatment for measles, supportive care and treatment of complications can significantly improve outcomes. Standard response measures include prompt identification and isolation of measles cases to reduce nosocomial transmission, provision of Vitamin A supplementation, and treatment of complications such as dehydration, pneumonia, malnutrition, and secondary infections.¹

Effective clinical management also depends on addressing barriers that affect whether children are brought for care in time, including constraints related to caregivers' roles, decision-making, mobility, cost, and access to information.

WHO recommends that children with acute measles receive Vitamin A, as it reduces disease severity and case-fatality risk. In addition, dehydration may require fluid management, pneumonia and other respiratory infections may require antibiotics, and children with malnutrition may need therapeutic feeding and closer follow-up. In larger outbreaks, temporary measles treatment centres or dedicated measles wards may also be established to manage surges in cases and concentrate clinical expertise, particularly in fragile or humanitarian settings, with attention to accessibility, privacy, and caregiver support.

Effective case management also depends on rapid operational support. Health workers may require refresher training on measles infection prevention, treatment, and referral pathways, while essential supplies such as Vitamin A, antibiotics, oral rehydration salts, and other supportive care commodities may need to be pre-positioned or rapidly distributed to affected areas.

Community engagement is equally important in the immediate response. Clear communication helps caregivers and families understand when and where to vaccinate children, how to recognize symptoms and danger signs, and when to seek care early, using approaches that effectively reach both women and men. Local leaders, women's organizations, youth groups, volunteers, and community-based workers can play a critical role in promoting uptake of vaccination and treatment, while helping to address rumours, misinformation, and fear. In this way, vaccination, case management, and risk communication work together to prevent outbreaks from escalating into major mortality events.

1 WHO, Guide for Clinical Case Management and Infection Prevention and Control During a Measles Outbreak, 2020

PILLAR 5

Recovery



After an outbreak has been contained, attention shifts to recovery – restoring and improving health services – and building greater health systems resilience to prevent future crises. Measles outbreaks often expose underlying weaknesses in health and immunization systems. The recovery stage is therefore an opportunity to address those weaknesses in the medium to long term. This pillar guides transforming negative events, or outbreaks, into catalysts for positive change.

Recovery starts with implementing the lessons learned from the outbreak. If a **Root Cause Analysis (RCA)** was not conducted as part of the initial outbreak investigation and response, district and national surveillance and EPI teams should organize to complete one as soon as possible after the outbreak response has ended. Together with findings from **After-Action Reviews (AARs)** and other outbreak evaluations, these analyses should be translated into concrete corrective actions, implemented at local and national level, to address the causes of the outbreak and reduce the risk of recurrence.

A central priority during recovery is restoring and strengthening **routine immunization services**. Root cause analysis and outbreak investigations often reveal missed communities, service delivery gaps, supply bottlenecks, weak data systems, and barriers to vaccine access and acceptance. Recovery may therefore include intensified outreach in affected areas, catch-up vaccination through routine services, better identification of zero-dose and under-immunized children, stronger systems for tracking missed doses and defaulters, and action to address barriers that effect caregivers' ability to access vaccination services. Where relevant, these lessons should also inform the design of future preventive measles or MR campaigns, particularly in areas recently affected by outbreaks.

Recovery should also include reinforcing **surveillance and early warning systems** for the future. Outbreaks are often a test of how quickly and effectively these systems detect cases and outbreaks. After an outbreak, countries may need to strengthen reporting systems, outbreak investigation capacity, laboratory support, or the use of risk assessments and immunity data. These actions enhance the system's resilience to detect and respond not only to measles, but also to other disease outbreaks.

Crucially, the recovery phase should link outbreak learning to broader **health system strengthening and longer-term planning**. Donors and governments may use the post-outbreak momentum, and the evidence generated through AARs and RCAs, to secure investments in workforce capacity, supply chains, cold chain systems, governance, and community engagement. Countries are also encouraged to incorporate outbreak-derived insights into their **National Immunization Strategies, Periodic Immunization Reviews**, and other multi-year planning processes. In practice, this may mean allocating more resources to persistently low-coverage districts, refining delivery strategies, or introducing new approaches to improve follow-up and service uptake.

At the global level, M&RP partners should continue to aggregate lessons from multiple outbreaks to refine guidance and strengthen best practices over time. In fragile and humanitarian settings, recovery may also help link short-term outbreak response with longer-term development investments, including support to rebuild health service delivery and close the relief-to-development loop.

From a longer-term perspective, recovery from each outbreak should move countries closer to the strategic goal of **measles and rubella elimination by 2030**.

DEEP DIVE

Root Cause Analysis and implementing corrective action

Recovery becomes meaningful when findings from a Root Cause Analysis are translated into concrete corrective action. For example, if an RCA reveals that routine immunization teams do not reach certain urban slums, authorities may design targeted initiatives such as urban immunization clinics or more permanent mobile teams for these underserved communities. If the RCA identifies barriers related to caregiving roles, mobility, safety, decision-making, or access to information, recovery plans may also need to adapt service delivery and outreach accordingly. If cold chain breakdowns from poor maintenance caused vaccine stockouts, recovery plans may include investments in cold chain maintenance, replacement of older equipment, improved stock management, and stronger logistics.

In some contexts, recovery may also include follow-up catch-up vaccination activities to close residual immunity gaps among children who were missed during the outbreak response or remain unprotected. Where the outbreak has affected older age groups, recovery may also involve extending catch-up approaches—for example, through school-based vaccination or other targeted strategies for adolescents and young adults who missed earlier doses.

Recovery actions work best when they are designed around what the RCA found in that specific setting. Where teams were not reaching certain communities, the response might involve remapping catchment areas or adjusting outreach timing. Where access was constrained by gender-related factors, this might also include adapting service hours, using female health workers where appropriate, or strengthening engagement with both women and men in their roles as caregivers and decision-makers. Where missed children were invisible to the health system, the priority might be strengthening community-based tracking rather than relying solely on clinic-based follow-up.

Where an RCA finds that misinformation, low awareness, or weak trust contributed to low uptake, recovery should include stronger risk communication and community engagement. This may involve dialogue with affected communities, training community health workers to advocate for immunization, and working with trusted local leaders or influencers to rebuild confidence. It may also require using communication and engagement approaches that effectively reach both women and men, recognizing that they may have different roles, concerns, and access to information.

Crucially, recovery also links outbreak learning to broader health system strengthening. Donors and governments may use the post-outbreak momentum, and the evidence generated through AARs and RCAs, to secure investments that address the specific weaknesses the outbreak exposed – whether in frontline worker capacity in a particular district, cold chain systems at a specific level of the supply chain, data systems that failed to identify pockets of under-immunization, or governance arrangements that affected the speed of decision-making during the response. This should include attention to whether these weaknesses affected some groups more than others, and to how recovery investments can reduce persistent barriers to equitable access.

PILLAR 6

Equity



Measles often finds the deepest gaps in immunity, exposing and amplifying existing social, geographic, and political inequities. Gender norms and inequalities can further shape who is missed, who can access services in time, and how families seek vaccination and care during outbreaks. Through 2030, the MOSF calls for tailored strategies to ensure that every child, regardless of where they live or the circumstances they face, has access to measles vaccination and outbreak protection. Equity is therefore not a separate concern, but a central condition for effective outbreak prevention, preparedness, response, and recovery.

Three equity imperatives are especially important for measles outbreak management, all of which may be further shaped by **gender-related barriers to access, information, and careseeking**:

1. CONFLICT AND HUMANITARIAN ACCESS

In conflict zones and humanitarian emergencies, measles can be especially devastating. Overcrowding, malnutrition, displacement, and disrupted health services can turn outbreaks into major mortality events. In these settings, women, girls, and other at-risk groups may face additional barriers related to insecurity, restricted mobility, caregiving burdens, and exposure to gender-based violence, all of which can affect access to vaccination and care. In these settings, rapid measles vaccination is often one of the earliest and most important public health interventions, and it must be planned and delivered in close coordination with humanitarian actors, government authorities, and local partners. Protecting affected populations may require exceptional delivery strategies, flexible logistics, and negotiation of access in insecure environments.

2. MOBILE AND MIGRANT POPULATIONS

In conflict zones and humanitarian emergencies, measles can be especially devastating. Overcrowding, malnutrition, displacement, and disrupted health services can turn outbreaks into major mortality events. In these settings, women, girls, and other at-risk groups may face additional barriers related to insecurity, restricted mobility, caregiving burdens, and exposure to gender-based violence, all of which can affect access to vaccination and care. In these settings, rapid measles vaccination is often one of the earliest and most important public health interventions, and it must be planned and delivered in close coordination with humanitarian actors, government authorities, and local partners. Protecting affected populations may require exceptional delivery strategies, flexible logistics, and negotiation of access in insecure environments.

3. MARGINALIZED NATIONAL COMMUNITIES

Marginalized national communities, include populations excluded by geography, poverty, social marginalization, or other barriers to access. These may include remote rural communities, urban slum populations, ethnic or religious minorities, indigenous groups, or other underserved populations living within otherwise stable settings. In these contexts, equity depends not only on physical access, but also on trust, cultural appropriateness, affordability, delivery approaches that address gender-related barriers, and the ability of programmes to engage women and men in ways that reflect their roles, needs, and realities.

Fragile states with weak health infrastructure may face all three of these challenges at once. Such settings often require more adaptive service delivery, stronger community-based detection, and closer integration between routine immunization, outbreak response, and humanitarian support.

Success under this pillar will be reflected when populations that are consistently missed or underserved are no longer left vulnerable to preventable outbreaks. By marrying humanitarian action with immunization equity, the MOSF not only fights a virus but also strengthens the principle of health as a human right for all, even in the hardest-to-reach corners of the world.

DEEP DIVE

Tailored approaches for marginalized populations

In conflict zones and humanitarian emergencies, measles can be especially severe and deadly. Overcrowding, malnutrition, and disrupted healthcare can turn a measles outbreak into a major killer, with case-fatality rates rising well above normal in some settings. Women, girls, and other at-risk groups may also face additional barriers related to restricted mobility, caregiving burdens, unequal access to information or resources, and exposure to protection risks, including gender-based violence, all of which can affect timely access to vaccination and care. For this reason, mass measles vaccination has long been treated as one of the first public health interventions in humanitarian crises. Humanitarian guidance, including Sphere standards¹ and WHO/UNICEF joint statements, has emphasized preventive vaccination of children 6 months to 15 years of age in emergency-affected populations as early as possible, ideally reaching more than 95% coverage within the first weeks of an acute emergency. In major displacement crises, including in South Sudan and during the Syrian refugee emergency, rapid measles vaccination in camps and settlements has been critical to preventing large-scale mortality.

In such settings, ministries of health and immunization partners often need to work closely with organizations such as UNICEF, WHO, UNHCR, the Red Cross/Red Crescent, and NGOs such as MSF, which can support vaccine delivery even in insecure or access-constrained areas. In some contexts, access negotiations – or temporary ceasefire arrangements such as “Days of Tranquility” – may be needed to allow campaigns to proceed safely. This approach has important historical precedent, including in Afghanistan and the DRC, and remains relevant in current conflicts. Delivery may also require fixed vaccination posts at safer locations such as checkpoints, food distribution

1 Sphere Association, The Sphere Handbook, 4th ed., 2018

sites, or clinics in protected compounds, as well as flexible cold-chain approaches including solar refrigerators, vaccine carriers, and careful planning to reduce wastage where access is sporadic. Service design may also need to account for privacy, safety, timing, and the use of female health workers where these factors affect whether women and children can access services.

For mobile and cross-border populations, tailored strategies may include synchronized vaccination across border areas, vaccination posts at border crossings or transit points, and outreach along seasonal migration routes. In some cases, outreach to nomadic populations may be combined with other services, such as veterinary support or food assistance, to increase uptake. In refugee camps and internally displaced person settlements, a practical approach is to check vaccination status on arrival and provide measles vaccination immediately, often alongside polio vaccination or Vitamin A where appropriate. This helps create an immune buffer in case infected individuals enter the camp and is far more effective than trying to control an outbreak once transmission is already underway. These strategies should also take into account barriers related to caregiving responsibilities, documentation, control over movement, and uneven access to information or transport, which may affect women and children in particular.

For marginalized national communities, effective approaches often need to begin with building trust, providing care and treatment, and then negotiating access for vaccination. Working with local leaders, trusted NGOs, faith-based actors, or community volunteers can help improve confidence and uptake. Outreach may need to take place through markets, schools, places of worship, or other community gathering points. In some settings, female health workers and volunteers may be especially important where women and girls face restrictions on movement or access. Integrated delivery can also help overcome socio-economic barriers—for example, combining measles vaccination with nutrition screening, child health services, or even practical support such as food rations or other essentials can make services more acceptable and easier to access.

In fragile settings with weak routine infrastructure, countries may need to rely on extended outreach approaches, periodic Child Health Days, community informants, or telecommunications-based reporting to maintain coverage and identify outbreaks early where routine reporting systems are weak. These efforts should be informed by an understanding of which groups are being missed and why, including barriers related to gender, mobility, trust, and protection. Across all these settings, the central principle is the same: outbreak protection must be designed around the realities of the populations most at risk of being missed. Across all these settings, the central principle is the same: outbreak protection must be designed around the realities of the populations most at risk of being missed.

Monitoring, Evaluation and Learning







Suggested Indicators

A set of suggested indicators underpins the six pillars of the Measles Outbreak Strategic Framework 2026-2030, to support shared accountability and prioritization, and adaptive learning across the partnership.

Wherever possible, monitoring should rely on existing national and global reporting systems, surveillance data, immunization coverage estimates, and established outbreak response processes. The intent is not to create parallel measurement mechanisms, but to align existing information streams to the strategic priorities outlined in this document

To that end, the table below presents an illustrative menu of indicators aligned to the six strategic pillars. These indicators are grouped into three categories, providing regional and country partners a hierarchy for prioritization:

- » Core indicators reflect widely available and foundational measures that already are or should be commonly tracked through existing systems.
- » Recommended indicators provide additional strategic insight and may be monitored where feasible.
- » Advanced or context-specific indicators may be relevant in certain settings but are not expected universally.

Pillar	Core Indicators	Recommended	Advanced/ Context-Specific
 1. Coordination	<ul style="list-style-type: none"> » Existence of national outbreak coordination mechanism or rapid response team 	<ul style="list-style-type: none"> » Expert missions or surge deployments to support outbreak response 	<ul style="list-style-type: none"> » Documentation of coordination lessons following major outbreaks
 2. Prevention	<ul style="list-style-type: none"> » MCV1 and MCV2 coverage, » Frequency and coverage levels of preventive SIAs (most recent) 	<ul style="list-style-type: none"> » # / proportion of Zero-dose children » Gender disaggregated proportion of coverage 	<ul style="list-style-type: none"> » Coverage and zero-dose information at subnational level
 3. Preparedness	<ul style="list-style-type: none"> » Countries with a stated outbreak preparedness/response plan » Existence of emergency stockpile/ access mechanism 	<ul style="list-style-type: none"> » Existence of emergency stockpile 	<ul style="list-style-type: none"> » Simulation exercises conducted
 4. Response	<ul style="list-style-type: none"> » ORI conducted » Time from lab confirmation to vaccination start 	<ul style="list-style-type: none"> » Coverage achieved in ORI » Proportion of female vaccinators/health workers deployed in outbreak response campaigns 	
 5. Recovery	<ul style="list-style-type: none"> » % outbreaks with technical reviews submitted within 60 days of ORI conclusion 	<ul style="list-style-type: none"> » Post-outbreak MCV1/MCV2 coverage trends in affected districts » Proportion of activities completed in plans developed from root cause analysis 	<ul style="list-style-type: none"> » Technical reviews leading to preparedness plan updates
 6. Equity	<ul style="list-style-type: none"> » Inclusion of targeted strategies for hard-to-reach populations » Coverage improvements among underserved populations » Proportion of outbreak response plans that include actions to address gender-related barriers to access, information, or care seeking » Proportion of female vaccinators/ health workers deployed in outbreak response campaigns 		

How the partnership will use this information

These indicators are intended to support routine learning and strategic decision-making, including identifying bottlenecks (e.g., response speed), highlighting persistent immunity gaps, and focusing partner support where it can have the greatest impact. Results can also strengthen advocacy by demonstrating improvements in outbreak risk and response performance using available data, while avoiding the creation of additional reporting burdens. For example, being able to demonstrate that “in the past 3 years, average outbreak size dropped by 70% and response time halved” is a powerful message that the strategy is working. Conversely, if certain indicators stagnate, it signals where to adjust strategy or inject more investment.

Progress reviews

Progress under the MOSF will be reviewed through existing partnership and regional mechanisms and will align with broader M&RP planning and review processes. The MOSF does not establish separate reporting timelines or country performance thresholds; rather, it supports partners and countries in using available information to guide prioritization and continuous improvement across the outbreak cycle.

Appendix 1: References and Key Documents

References

- » *Measles and Rubella Global Updates*. Geneva: World Health Organization, August 2025.
- » Immunization Agenda 2030. IA2030 Scorecard. 2025. <https://scorecard.immunizationagenda2030.org/ig1.3?reg=GBL>.
- » "Measles and Rubella Laboratory Network." In *Immunization Analysis and Insights*. Geneva: World Health Organization, 2018. <https://www.who.int/teams/immunization-vaccines-and-biologicals/immunization-analysis-and-insights/surveillance/surveillance-for-vpds/laboratory-networks/measles-and-rubella-laboratory-network>.
- » "Measles Vaccines: WHO Position Paper." *Weekly Epidemiological Record* 92, no. 17 (2017): 205–27. <https://www.who.int/publications/i/item/who-wer9217>.
- » *Measles Outbreak Guide*. Geneva: World Health Organization, 2022. <https://www.who.int/publications/i/item/9789240052079>.
- » *Annual Progress Report 2024*. Geneva: Gavi, the Vaccine Alliance. 2024. <https://www.gavi.org/sites/default/files/programmes-impact/our-impact/apr/Gavi-2024-Annual-Progress-Report.pdf>.
- » *Guide for Clinical Case Management and Infection Prevention and Control During a Measles Outbreak*. Geneva: World Health Organization, 2020. <https://www.who.int/publications/i/item/9789240002869>.
- » *The Sphere Handbook: Humanitarian Charter and Minimum Standards in Humanitarian Response*. 4th ed. Geneva: Sphere Association, 2018. <https://spherestandards.org/handbook/>.
- » Gender and Immunization Global Analysis Tool, UNICEF, 2026, <https://www.unicef.org/documents/gender-immunization-global-analysis-tool> (ENG/FR/AR/PORT)

Other Key Documents

- » *Measles Outbreak Guide*. Geneva: World Health Organization; 2022 <https://www.who.int/publications/i/item/9789240052079>
- » *Measles Outbreak Strategic Response Plan 2021–2023 (updated and extended through 2025)*. Geneva: World Health Organization; 2021. <https://www.who.int/publications/i/item/9789240018600>
- » *Outbreak Response Fund: Standard Operating Procedures*. Geneva: Measles & Rubella Partnership; 2025. <https://measlesrubellapartnership.org/resources/outbreaks/outbreak-response-fund/>
- » *Measles Emergency Health Kit 2021*. Geneva: World Health Organization; 2021: <https://www.who.int/emergencies/emergency-health-kits/measles-kit-2021>
- » *Monitoring and Reporting of Essential Immunization Catch-Up*. Geneva: World Health Organization; 2025. <https://www.who.int/publications/b/73282>
- » *Vaccine Preventable Diseases Surveillance Standards: Measles*. Geneva: World Health Organization; 2018. <https://www.who.int/publications/m/item/vaccine-preventable-diseases-surveillance-standards-measles>

Appendix 2: Suggested Definitions of Key Indicators

The indicators below are illustrative definitions for some of the measures referenced in the Monitoring, Evaluation and Learning section. They are intended to support common interpretation where useful, but do not establish new reporting requirements, universal targets, or separate accountability mechanisms.

1. Coordination

- » **Existence of national outbreak coordination mechanism or rapid response team:** Whether a recognized national coordination platform, incident management structure, or rapid response team exists to support measles outbreak preparedness and response.
- » **Expert missions or surge deployments to support outbreak response:** Deployment of technical support teams, surge staff, or expert missions to assist countries during outbreak response.
- » **Documentation of coordination lessons following major outbreaks:** Existence of written lessons learned or coordination review findings following a major outbreak.

2. Prevention

- » **MCV1 and MCV2 coverage:** National coverage estimates for the first and second doses of measles-containing vaccine, typically drawn from administrative reporting, survey data, or WHO/UNICEF estimates where available.
- » **Frequency and coverage levels of preventive SIAs (most recent):** The most recent preventive measles or measles-rubella supplementary immunization activity conducted, including information on timing and achieved coverage.
- » **Number / proportion of zero-dose children:** The estimated number or proportion of children who have not received any routine immunization doses, as defined through national or global immunization monitoring approaches.
- » **Coverage and zero-dose information at subnational level:** Availability of district- or other subnational-level data on vaccination coverage and zero-dose populations, to help identify pockets of susceptibility.

3. Preparedness

- » **Countries with a stated outbreak preparedness/response plan:** Whether a country has a documented measles outbreak preparedness and response plan, whether stand-alone or integrated into broader public health emergency or immunization plans.
- » **Existence of emergency stockpile/access mechanism:** Whether a country has an emergency stockpile of essential outbreak supplies, or a rapid access mechanism to obtain such supplies when needed.
- » **Existence of emergency stockpile:** Availability of vaccine or essential response commodities held nationally or otherwise pre-positioned for rapid deployment.
- » **Simulation exercises conducted:** Whether simulation exercises, tabletop drills, or other readiness exercises have been conducted to test outbreak preparedness arrangements.

4. Response

- » **ORI conducted:** Whether an outbreak response immunization campaign was implemented following confirmation or strong suspicion of an outbreak.
- » **Time from lab confirmation to vaccination start:** The time elapsed between laboratory confirmation of an outbreak and the start of outbreak vaccination activities.
- » **Coverage achieved in ORI:** The estimated proportion of the target population reached through outbreak response immunization activities.

5. Recovery

- » **Percentage of outbreaks with technical reviews submitted within 60 days of ORI conclusion:** Proportion of outbreaks for which an after-action review, root cause analysis, or equivalent technical review was completed and documented within 60 days after ORI activities ended.
- » **Post-outbreak MCV1/MCV2 coverage trends in affected districts:** Changes in routine measles vaccination coverage in outbreak-affected districts following the outbreak.
- » **Proportion of activities completed in plans developed from root cause analysis:** Share of agreed corrective actions identified through an RCA that have been implemented.
- » **Technical reviews leading to preparedness plan updates:** Evidence that findings from outbreak reviews informed revisions to preparedness plans, immunization plans, or related operational guidance.

6. Equity

- » **Inclusion of targeted strategies for hard-to-reach populations:** Whether outbreak prevention, preparedness, response, or recovery plans include tailored approaches for populations that are difficult to reach or consistently underserved.
- » **Coverage improvements among underserved populations:** Evidence of improved measles vaccination coverage among specific underserved or marginalized groups over time.
- » **Gender Equality and empowerment of women and girls:** Gender roles and norms have been shown to act as substantial determinants of health outcomes . Around the world, the responsibility to ensure children's health through routine immunization overwhelmingly rests on the shoulders of women. Gendered analyses have revealed that entrenched and multi-level barriers hinder their use of and access to adequate vaccination services, posing a serious threat to both children's health outcomes and female caregivers' substantial unpaid workload and time constraints, in addition to safety concerns.

Appendix 3: Glossary of Acronyms

AAR	After-Action Review
CRS	Congenital Rubella Syndrome
EPI	Expanded Programme on Immunization
EYE	Eliminate Yellow Fever Epidemics
GMRLN	Global Measles and Rubella Laboratory Network
GOARN	Global Outbreak Alert and Response Network
GPEI	Global Polio Eradication Initiative
GTFCC	Global Task Force on Cholera Control
IA2030	Immunization Agenda 2030
IHR	International Health Regulations
LIC	Low-Income Country
M&RP	Measles & Rubella Partnership
MCV1	Measles-Containing Vaccine, first dose
MCV2	Measles-Containing Vaccine, second dose
MIC	Middle-Income Country
MOSF	Measles Outbreak Strategic Framework 2026-2030
MOSRP	Measles Outbreak Strategic Response Plan 2021-2025
MRSF	Measles and Rubella Strategic Framework 2021-2030
MSF	Médecins Sans Frontières (Doctors Without Borders)
NGO	Non-Governmental Organization
NPHI	National Public Health Institute
OBR	Outbreak Response
ORF	Outbreak Response Fund
ORI	Outbreak Response Immunization activities
PHEOC	Public Health Emergency Operations Center
PIRI	Periodic Intensification of Routine Immunization
RCA	Root Cause Analysis
RCV	Rubella-Containing Vaccine
RED	Reaching Every District framework
SIA	Supplementary Immunization Activity
UNHCR	United Nations High Commissioner for Refugees

