

VACCINATION BARRIERS IN COMPLEX SETTINGS



PHOTO:
A child, accompanied by his mother, is vaccinated against measles by an MSF staff member in the Adré transit camp (eastern Chad).

CHAD © THIBAUT FENDLER

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INTRODUCTION

Vaccination remains one of the most effective interventions to prevent illness and death. Yet, for people living in conflict and humanitarian settings, access to routine vaccination, vaccination catch up, or needed interventions when outbreak occurs is far from guaranteed. The consequences include repeated outbreaks and their consequences including illness from measles, diphtheria, meningitis, among other vaccine preventable illness, and the significant number of persons (mainly children) who become ill or die. This situation is far from inevitable; rather there are concrete actions that can be taken to better prevent further illness and death.

1.1. Global overview

Since 2020, global vaccination coverage dropped sharply and has not caught up to 2019 levels, with millions of un- and under-vaccinated children. Indeed, mass vaccination campaigns were among the most disrupted service during covid-19¹. In 2023, there were approximately 14.5 million children globally that haven't received the first routine vaccine (DTP1), the proxy for zero-dose children. An increase from 2022², and over 21 million under-immunized (those who have not completed the routine vaccination scheme according to their age). Children under the age of five who have never been vaccinated or not completely, are especially vulnerable to death and poor health outcomes.

While global coverage has indeed worsened significantly since 2020, in many settings where MSF works, low vaccination coverage and outbreak were existing challenges well before Covid-19, which have now been significantly exacerbated. Globally, coverage rates and progress in reaching the unvaccinated is —and always has been— vastly unequal, with low resourced³, remote and conflict affected populations having more likelihood of being and remaining un- or under vaccinated. UNICEF reports that 51% (10.8 million) of un- and under vaccinated children live in countries with social or institutional fragility or affected by conflict⁴. In 2019, Gavi (the global vaccine alliance)⁵ reported that one-fifth of unvaccinated children in Gavi-supported countries lived in conflict settings⁶, a population who faces some of the most complex barriers to accessing

Vaccination remains one of the most effective interventions to prevent disease and death

1 West, K. and Gonzalez, R. (December 18, 2021). Inequality in access to COVID-19 vaccines: a collective public health failure. MSF and IECAH Institute report: *Humanitarian action in 2020-2021: pandemic delays needed reforms*. Chapter 6. p. 97. Available at: <https://www.msf.es/sites/default/files/documents/informe-iecah-msf-2021.pdf>

2 WHO (July 15, 2024). *Immunization coverage*. Available at: <https://www.who.int/news-room/fact-sheets/detail/immunization-coverage>

3 Gavi reports that two-thirds of zero dose children live in households below the poverty line (1.90 USD per day).

4 UNICEF (July 2024). *Vaccination and immunization statistics*. Available at: <https://data.unicef.org/topic/child-health/immunization>

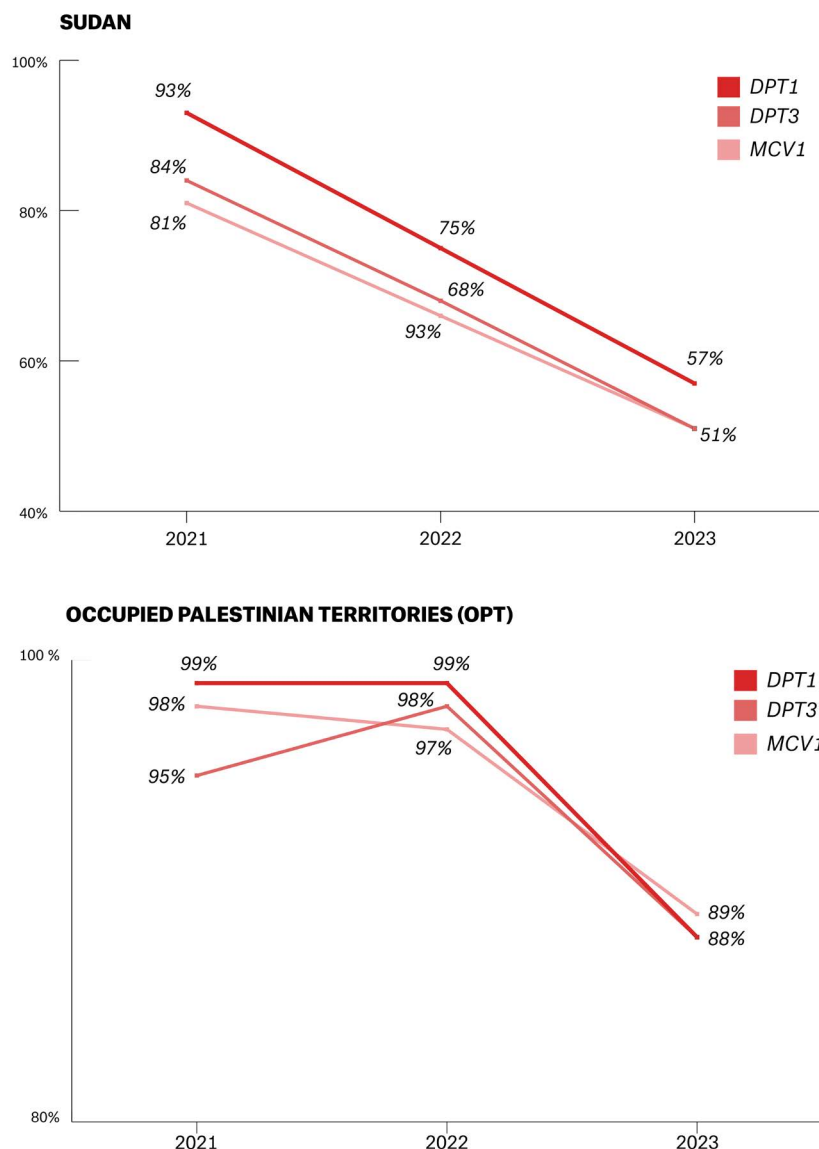
5 Previously the Global Alliance for Vaccination and Immunisation.

6 Gavi (Last accessed September 1, 2024). *Zero-dose children and underserved communities*. Available at: <https://www.gavi.org/our-alliance/strategy/phase-5-2021-2025/equity-goal/zero-dose-children-missed-communities>

vaccination and other health services, including in some cases interests of their governments or parties to the conflict.

Indeed, in some of the most acute conflict settings where MSF is present, Sudan and Gaza, coverage rates have dropped sharply as a result of hostilities and the breakdown of health systems. The current polio outbreak in Gaza is one stark consequence of coverage rates⁷.

In some of the most acute conflict settings, coverage rates have dropped sharply as a result of hostilities and the breakdown of health systems



In other contexts, low coverage has caused outbreaks over many years. In 2023, over 300,000 measles cases were recorded in DRC, and over 6,000 deaths⁸.

While the first dose of diphtheria, pertussis, tetanus (DPT1) coverage is used as a proxy for zero-dose children, measles coverage is highly relevant in humanitarian —and other

⁷ MSF (September 1, 2024). *Polio vaccination in Gaza*. Available at: <https://www.doctorswithoutborders.org/latest/msf-supports-polio-vaccination-campaign-gaza>

⁸ There are approximately 839,000 zero-dose children and 2 million without measles vaccination. See ReliefWeb (July 2, 2024). *Why measles remains a mass killer in DR Congo*. Available at: <https://reliefweb.int/report/democratic-republic-congo/why-measles-remains-mass-killer-dr-congo>

Only 83% of children worldwide received their first measles dose by 2023, with 74% receiving the second dose

settings— given the risk and frequent occurrence of outbreaks due to its highly contagious nature⁹. Coverage rates are vastly insufficient, resulting in a high number and scale of outbreaks observed by MSF and other actors in nearly all the countries where we work. MSF Spain¹⁰ has treated more measles patients every year since 2020, including over 30,000 already in 2024, as of August. Indeed, the consequences of low vaccination coverage are well documented, including repeated outbreaks in some contexts of vaccine preventable illness from measles, diphtheria, meningitis, among others, and the significant number of persons (mainly children) who become ill or die, and long-term disabilities caused.

In 2023, only 83% of children globally received the first measles dose, with 74% receiving the second dose (95% coverage is needed for herd immunity for measles)¹¹. Measles requires rapid and effective action to prevent the scale of the outbreak from becoming catastrophic, including high mortality, mostly of children. From 2021 to 2022, the number of measles cases increased by 18%, and deaths by 22%, with 136,000 deaths in total¹². In a high population settings (e.g. internally displaced persons -IDP- or refugee camps) with low vaccination coverage, measles can rapidly spread; outcomes are worsened by living conditions, including poor water and sanitation, and co-morbidities, especially poor nutritional status for children under five. In 2023, 103 countries experienced measles outbreaks (91 countries did not).

In recent years, significant global efforts are underway including the Big Catch-up initiative which expands vaccine coverage to children up to 5 years old and covers the costs typically co-financed by governments in eligible countries. In addition, the Gavi 6.0 strategy specifically prioritises the need for differentiated fragility responses which should **“target and tailor support to regional, national and subnational needs, including fragile, conflict and humanitarian contexts”**¹³. Gavi 6.0 along with Gavi's fragility, emergency and displacement (FED) policy¹⁴, present important opportunities to implement approaches to improve responses in conflict and other humanitarian settings.

Thus far, despite global efforts to address global vaccination gaps, largely un-mitigated are the complex structural, political, and operational barriers faced by humanitarians to conduct

9 WHO (July 12, 2024). *Measles*. Available at: <https://www.who.int/news-room/fact-sheets/detail/measles>

10 The article focuses on MSF Spain's intervention contexts, so the figures presented are mostly the organization's figures, although global data are also provided for all operational sections of the MSF movement.

11 WHO (July 15, 2024). *Global childhood immunization levels stalled in 2023, leaving many without life-saving protection*. Available at: <https://www.who.int/news/item/15-07-2024-global-childhood-immunization-levels-stalled-in-2023-leaving-many-without-life-saving-protection>

12 WHO (November 16, 2023). *The global threat of measles continues to rise as millions more children remain unvaccinated for another year*. Available at: <https://www.who.int/news/item/16-11-2023-global-measles-threat-continues-to-grow-as-another-year-passes-with-millions-of-children-unvaccinated>

13 Gavi (June 7, 2024). *Strategy 2026 - 2030*. Available at: <https://www.gavi.org/sites/default/files/board/minutes/2024/6-7-june/Gavi-60-strategy-one-pager-simplified-version.pdf>.

14 *Idem*.

preventative and reactive vaccination activities in conflict and humanitarian contexts, and the specific consequences for these populations¹⁵. For many years, MSF has observed these barriers and challenges and taken significant measures to overcome them whenever possible. However, addressing these barriers requires significant changes in approach at all levels, which we cannot achieve alone.

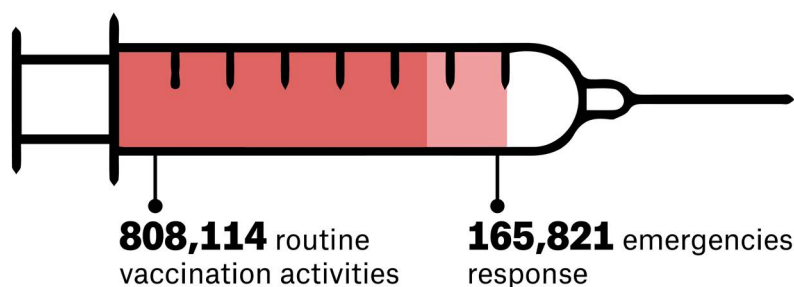
There is an urgent need for the international community and response actors to address and ensure the means and mechanisms are in place to enable effective vaccination and outbreak response activities in conflict and humanitarian settings.

1.2. MSF Spain vaccination and outbreak response

In 2023 alone, MSF Spain supported the administration of 1,137,316 doses of vaccination worldwide. Among them, 165,821 doses were in response to emergencies in 9 reactive campaigns (vaccination campaigns in response to outbreaks) and 808,114 were routine vaccination activities.

Barriers to immunization are multifactorial, including difficulties in reaching populations

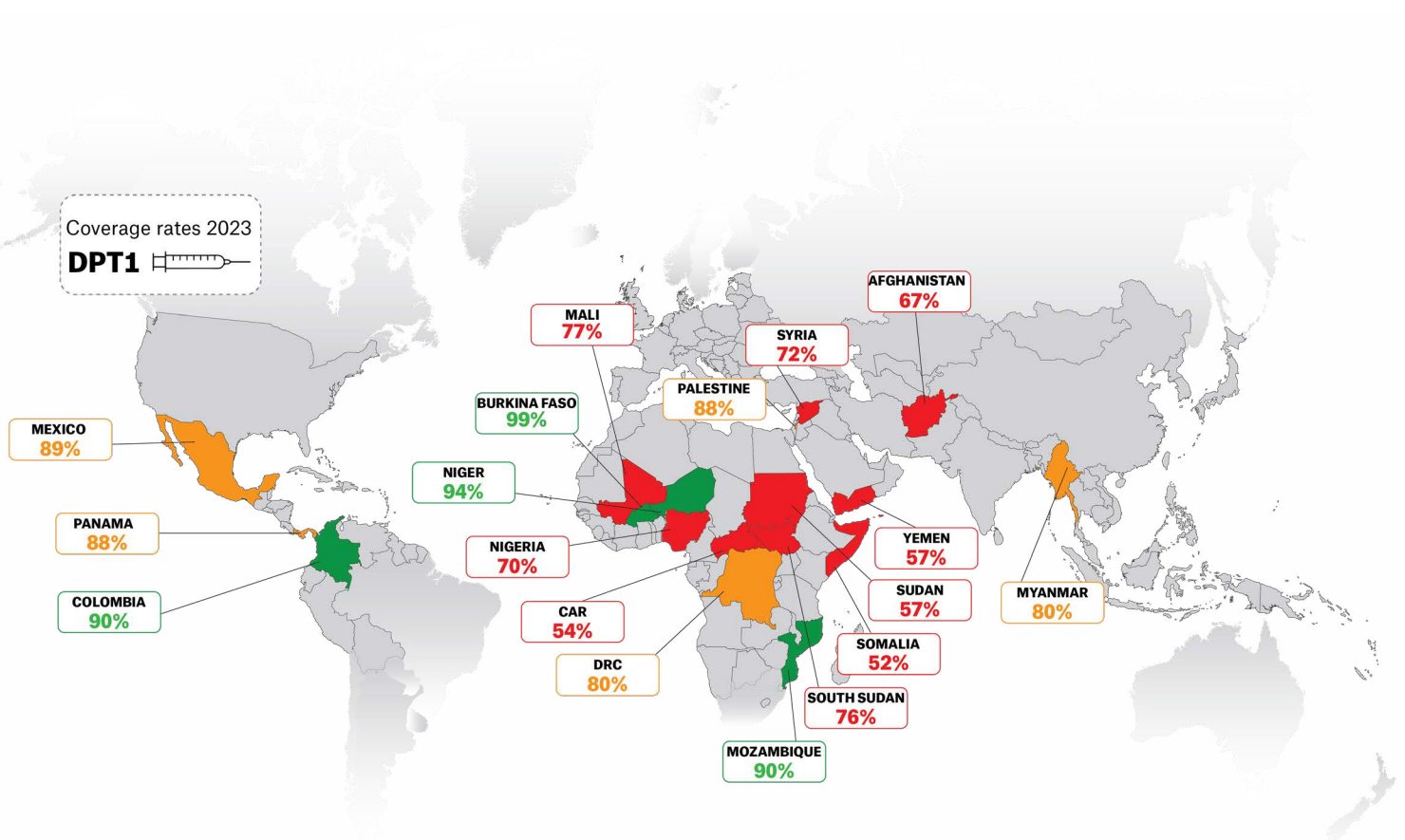
1,137,316 total of doses of vaccination worldwide



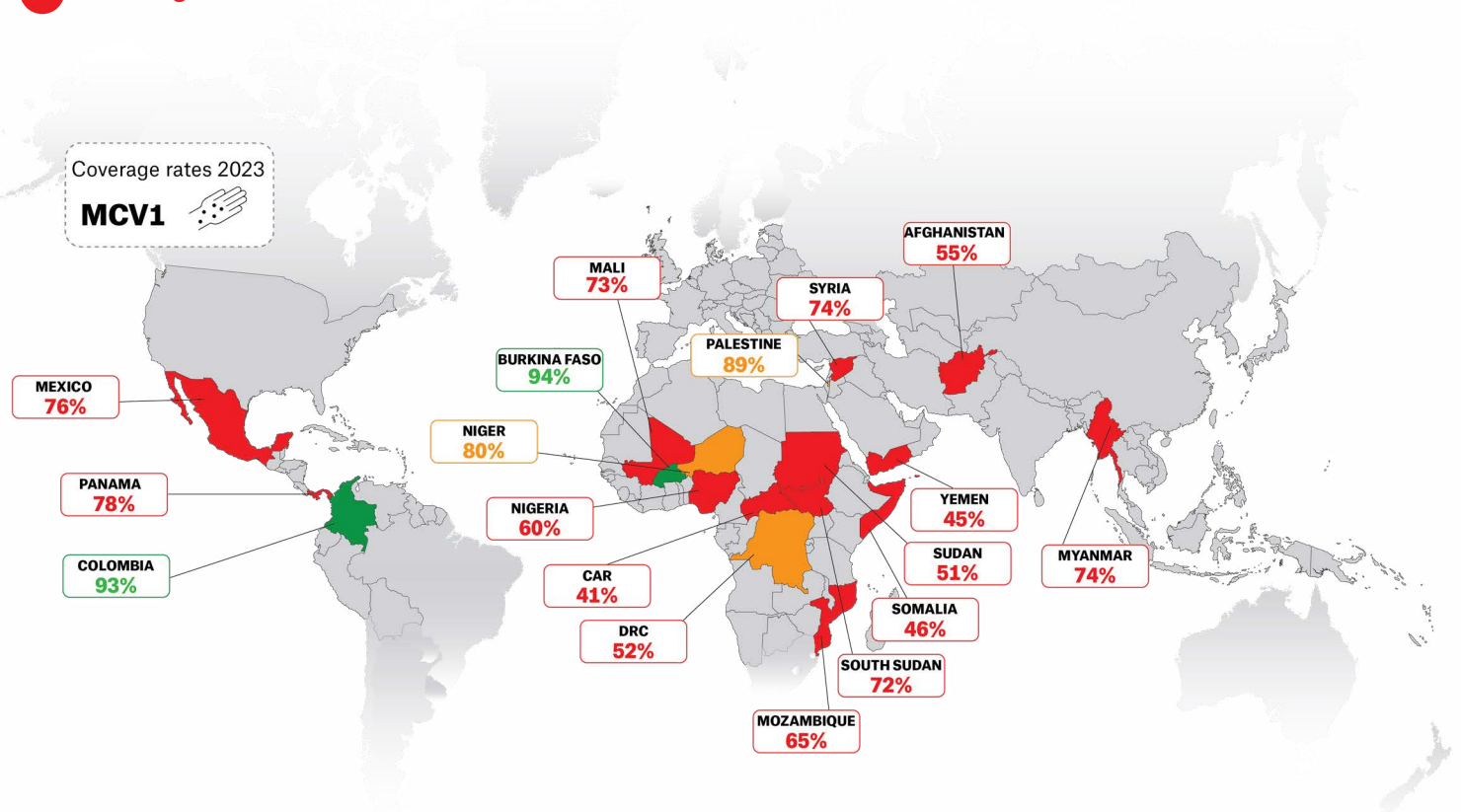
See figure 1 and 2

¹⁵ In addition to the global challenges linked to covid-19 and the aftermath, in many contexts where MSF works, conflict and consequences of conflict result in disruption or limited availability of routine vaccination, and important challenges and barriers to catch up and implement reactive vaccination activities.

f1 Coverage Rates 2023 DPT1



f2 Coverage rates 2023 MCV1



Maps highlight official/WUENIC coverage rates in countries where MSF Spain operates. Note that sub-national data may substantially differ.

In some areas where MSF operates, we may be one of the few or only actors with the capacity to carry out vaccination activities.

Overall MSF data¹⁶:

- 3,295,700 vaccinations against measles in response to an outbreak.

Vaccination and Response by MSF Spain¹⁷:

- Measles cases treatment: 20,430.
- Measles vaccinations campaigns were conducted in 5 countries: 162,308 doses.
- Meningitis in RCA: 2,152 cases treated; mass vaccination campaign in RCA including 15,762 people.

In a number of cases, urgently needed or planned activities could not go forward due to barriers faced including: supply chain limitations (non-availability of sufficient quantities of vaccinations, barriers to importation); policy barriers (including restrictions/limitations on who can be vaccinated e.g. based on age group): not being authorised by authorities or expressly prohibited from conducting vaccination activities; significant access barriers to reach the most vulnerable populations, among others.

While it is difficult to quantify the number of vaccination and response activities that could not take place due to barriers, or to quantify the human impact of blockages and delays, the cumulative affect over many years is significant, resulting in preventable death and illness among some of the most vulnerable populations. In some areas where MSF operates, we may be one of the few actors, or the only, present with capacity and willingness to conduct vaccination activities and response; thus, missing these opportunities can be extremely consequential for people living in these areas. We have increasingly noted with concern that political and or financial interests at both national and more local levels often affect the extent to which MSF and other organisations can respond.

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UNMET VACCINATION NEEDS AND CONSEQUENCES OF UN/UNDER VACCINATION IN SELECT COMPLEX CONTEXTS

In addition to specific response barriers, there are significant structural and other weaknesses—or even complete breakdown—in health systems in many humanitarian settings¹⁸, rendering effective responses difficult in settings where outbreaks are likely due to coverage rates. Further, in conflict affected areas, parties

¹⁶ MSF (July 2024). *International Activity Report 2023*. Available at: <https://www.msf.org/sites/default/files/2024-07/msf-international-activity-report-2023.pdf>.

¹⁷ In addition to vaccine preventable diseases, we provide vaccines and treatment for epidemics not related to VPD, including cholera. In the MSF movement, this included 70,600 patients treated for cholera. In 2023, MSF Spain conducted activities to support cholera responses: 6,658 cholera cases, 5,549 doses administered.

¹⁸ For example, health systems may lack adequate financial support, human resources for health, and infrastructure to ensure the availability of preventative and other primary health care.

Health systems in low immunization contexts have important structural deficiencies

to conflicts are not always in a position —nor always the appropriate actors— to objectively determine whether and how to conduct response activities or allocate resources.

Humanitarian space and access to conduct vaccination activities in conflict and humanitarian settings for the populations most in need must be ensured and enabled to effectively address the current crises. Yet, decision-making and specific interests of various state and non-state actors (international, national and sub-national) is often a key factor in whether vaccination activities can and will take place, or whether they are restricted, as well as the rapidity and urgency placed on a particular outbreak, and on the speed with which an outbreak is declared. This underlies the current global architecture, in that governments remain at the center of a response, including in humanitarian and conflict settings.

At the global level, limitations with respect to production and supply of vaccinations and treatment commodities for outbreak¹⁹ can be extremely consequential. We have observed limited availability and significant delays in vaccination supply for reactive campaigns, which must be rapidly made available and administered when there is outbreak, to cut transmission. Simultaneously, in instances where humanitarians seek to utilise their own vaccination supply, MSF faces many restrictions, for example long lead times for importation and other bureaucratic impediments (not suitable in an emergency), or entire bans to import vaccination commodities. This situation can place humanitarians and health workers in an impossible situation in which they are responding to an outbreak, whilst unable to use the national supply chain for the outbreak response activities, and also blocked from importing our own doses. This can rapidly result in an outbreak becoming out of control, and facilities overwhelmed.

Likewise, even if there is supply available, humanitarians may not be granted permission or processes are longer than expected, to conduct vaccination activities in some settings even where there is urgent need. Vaccination may not be the priority of the leaders in control of an area (whether government, armed group or other actor), or there may be intentional restrictions on the provision of health services for some populations. In other cases, local actors may prefer to conduct vaccination activities themselves; this is not in itself an issue, assuming there is adequate capacity and quality assurance. However, this is not always the case. In some cases, interest in conducting interventions may be driven by financial or other incentives, a situation which may create high risk of corruption and poor-quality responses²⁰.

19 For example, during the widescale diphtheria outbreak in Nigeria in 2023, the sudden surge in demand for diphtheria vaccines in response to the ongoing outbreaks created global shortages of the vaccines and DAT. Upscaling of diphtheria vaccination needed to curb West Africa outbreaks. See MSF article (Nov. 16, 2023). *Drastic increase in vaccination needed in West Africa to curb deadly diphtheria outbreaks*. Available at: <https://www.msf.org/upscaling-diphtheria-vaccination-needed-curb-west-africa-outbreaks>

20 In such cases, the population may be left in an even more vulnerable situation, where there is a false assumption that there has been a good quality response (with a good strategy and implementation).

Structures and systems that govern vaccine availability and response should be adapted to humanitarian settings, to enable agile, rapid and effective responses.

The following examples highlight examples of specific challenges MSF has faced in operational areas:

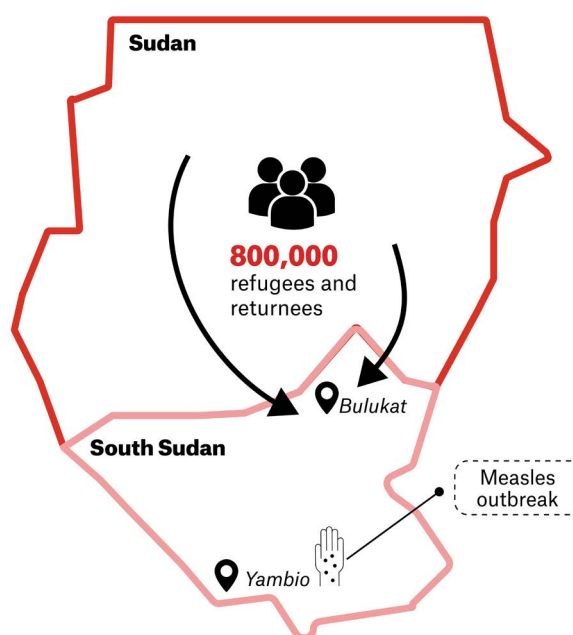
2.1. South Sudan

South Sudan faces complex vaccination and outbreak response challenges due to protracted conflict and insecurity, chronic health system weaknesses, and significant access issues faced by the population²¹. Low coverage rates result in recurrent outbreaks of vaccine preventable illness, and death. Since the end of 2022 to March 2024 alone, there were 12,760 cumulative cases and 239 deaths reported, with a case fatality rate (CFR) of 1.87% in the country²².

In addition to existing vaccination and outbreak response challenges, the additional influx of almost 800,000 refugees and returnees from Sudan into South Sudan since the beginning of the current conflict in April 2023 has created vast additional need.

In order to respond to this situation, in 2023, MSF Spain supported notable vaccination activities, 65,162 persons vaccinated overall, of which 29,065 were a reactive measles campaign. Overall, we treated 1,665 cases of measles and 49 of meningitis by 2023, and already treated 4,425 measles cases in the first half of 2024.

The arrival of 800,000 refugees in the country brings enormous needs in addition to the existing vaccination challenges



²¹ In 2023, WUENIC reports DPT1 coverage at 76% and MCV1 (first dose of measles vaccination) at 72%.

²² MSF (June 2024). Vaccination coverage survey for the measles vaccination campaign among children aged 6-59 months in Yambio and Gangura districts of Yambio County and Sakure district of Nzara County in Western Equatoria State, South Sudan.

a. Yambio, Western Equatoria

The recent measles outbreak and response in Yambio is an example of the structural and functional challenges of the supply and operational vaccination mechanisms in humanitarian settings. In Yambio, it took 4 months for the adequate supply to be available for the reactive campaign, unacceptably slow for an emergency. Provision of supply is far from automatic/systematic; rather MSF generally must negotiate for a reactive campaign to take place. During lengthy negotiations, measles—or other vaccine preventable illness—is further spread and lives lost. This time spent also results in lost humanitarian bandwidth, which is precious during an outbreak situation, and would be better used in responding to the crisis itself.

On 10th January 2024 a measles outbreak was declared in Western Equatoria state. MSF was already present in the area, in an emergency response to a yellow fever outbreak. Key components of an outbreak response generally requires both case management and (especially important where there is low coverage) reactive vaccination campaigns to cut transmission. As MSF was intervening with measles case management in several facilities and we observed a high number of cases, we requested that a reactive campaign should urgently take place, otherwise measles would continue to spread, likely resulting in more deaths. Our capacity was being significantly stretched, given the high number of admissions including 1,397 in-patient and 1,768 outpatient admissions²³, with many cases requiring isolation. A reactive campaign was urgently needed to ensure that the facilities would not be even further overwhelmed.

However, despite the urgency of the situation, we faced important barriers, including hesitancy amongst some actors to move forward with a reactive campaign. A mass campaign had been conducted in the area in 2023, and we sensed defensiveness/non-willingness of health actors to respond, rather than urgency, in the current outbreak. Regardless of the reasons behind the low coverage despite the previous campaign—additional population movement, limitations on geographic coverage of the campaign due to access/logistics, cold chain challenges—these did not reduce the urgency of this outbreak, or the need to cut transmission.

After weeks of external discussions at different levels (as the supply availability depends upon other actors), whilst we were continuing the response to the ongoing outbreak, and after several delays thereafter, the reactive vaccination campaign began on 7th May 2024, almost 4 months after the declaration of the outbreak. During this period, thousands of people became severely ill, requiring in-patient or out-patient care, and 13 people died. It is unknown how many more people in hard-to-reach areas were infected with measles and became severely ill and/or died, many of whom may not have been able to access health services²⁴.

23 MSF Spain supported MOH for the case management of around total 2,437 Measles cases between epidemiological week 12 and 20, 2024 in 3 MOH facilities in Yambio, Gangura and Sakure payam of Western Equatoria State (WES), South Sudan.

24 In South Sudan, measles outbreaks can be especially dangerous due to co-morbidities, especially for under-nourished or malnourished children, many of whom likely have limited access to health services.

The high number of admissions in Yambio, many of which were in need of isolation, stretched MSF's capacity to the limit

The vaccination campaign achieved an 86% coverage rate, however with significant differences in coverage between the urban and rural populations. While this is acceptable given logistical challenges, it is insufficient to prevent new outbreaks and highlights the inequities between communities. The response delays underscore the need for sufficient supply that is ready to be deployed for outbreak response and the need for reliable pre-agreements amongst actors. In addition, this experience underscores the need for space for honest discussions/dialogue after activities have taken place, to enable transparent assessment of future risk.

b. Upper Nile State: Bulukat

The approach being utilised in Bulukat in Upper Nile State is an example of a screening and referral approach adapted to a humanitarian setting to reach the un and under-vaccinated, in context where there is a high number of displaced persons.

Since the war in Sudan began in April 2023, nearly 800,000 people have fled to South Sudan, 80% of them South Sudanese nationals returning to their country of origin²⁵. Many have no clear destination and spend weeks or even months in and around transit centres. Bulukat transit centre is located 300 km from the border in Upper Nile State and hosts between 3,000 and 5,000 people at any given time, with over 10,000 people passing through the site each month. People arrive by boat from Renk and are expected to stay only up to a week in the transit site before moving on to other locations. In reality, many stay much longer due to constraints in onward transportation and lack of services in places of origin. Food, shelter, and WASH services in Bulukat are insufficient²⁶.

MSF runs a mobile clinic in Bulukat to screen new arrivals arriving by boat from Renk and provide basic healthcare to returnees, refugees, and host communities. Treating around 150 patients every day, the mobile clinic has provided over 28,000 outpatient consultations. As part of this approach, the team screens and refers people for preventive vaccination, which has included 28,738 doses administered, and has been an important intervention to prevent further crisis in a transit center for those fleeing conflict.

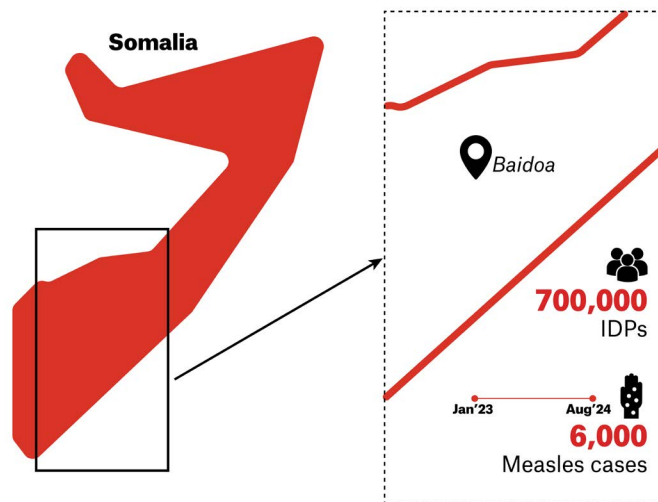
The approach includes a reception team to welcome new arrivals, who provide health and other information and conduct screening; those in need are then referred for vaccination and other needed health services. This relatively simple intervention has been successful in that there have been no outbreaks in Bulukat. However, such an approach is dependent on the provision of sufficient vaccination supply, and humanitarian or other actors who are able to manage the cold chain, and other logistics support. These requirements are far from guaranteed in conflict settings.

Bulukat is an example of screening unvaccinated people in a humanitarian setting with thousands of IDPs.

²⁵ Over 85% of the new arrivals enter South Sudan through the Joda border point in Renk County, Upper Nile State, from where they travel on to different locations throughout the country.

²⁶ Food rations are only provided for a seven-day period and many people staying much longer—a situation which creates vulnerability to illness.

2.2. Somalia



Somalia has one of the lowest immunisation coverage rates in the world: DPT1 coverage is 52%

Southwest State (SWSS) is one of the states in Somalia the most impacted by conflict, displacement, insecurity, and outbreak. Baidoa Town —the interim capital of Southwest state— hosts more than 700,000 IDPs. More than 50% of the population are IDPs, making Baidoa the second largest IDP settlement in Somalia after Mogadishu²⁷. A consequence of protracted conflict, fragmentation and an extremely weak or, in large parts of the country, non-existent health system, Somalia has one of the lowest vaccination coverage rates globally, with WUENIC reporting approximately 52% coverage for DPT1 (zero dose indicator).

While high vaccination coverage has been reported in Baidoa, there have been consistent reports of suspected cases of measles and whooping cough during the last 3 years. Between January 2021 to August 2023, Bay Regional Hospital in Baidoa alone admitted nearly 6000 measles cases²⁸. In Baidoa, many newly arriving IDPs have come from distant locations and having journeyed under extreme hardship²⁹, including districts which were not reachable during previous vaccination efforts in the past, leaving high numbers of newly arrived children (5-15 years) yet to be vaccinated with measles and pentavalent antigens.

²⁷ For more contextual information on the scale of health and humanitarian needs in Baidoa and MSF activities, see Abdi, M. and Aiken, D. (December 2023). 'Malnutrition in highly insecure areas: challenges in response and commitment to decentralized models of care. The cases of Baidoa (Somalia) and Zamfara (Nigeria)'. MSF and IECAH Institute report: *Humanitarian action in 2022-2023: climate emergency exacerbates other crises*. Chapter. 4. p. 59. Available at: https://www.msf.es/sites/default/files/2023-12/Informe-IECAH-MSF-La-accion-humanitaria-en-2022_2023-la-emergencia-climatica-agudiza-otras-crisis_0.pdf

²⁸ This is in part a consequence of continuous large numbers of new arrivals, as Baidoa is considered relatively safer than other areas in the vicinity.

²⁹ New arrivals have often travelled extremely long distances under difficult circumstances, with little or no access to food and water, and exposure to extreme weather and violence, increasing vulnerability to all illnesses and death. See MSF (April 9, 2024). *Somalia: MSF helps address protracted humanitarian crisis in Baidoa*. Available at: <https://msf.or.ke/news-and-resources/news/somalia-msf-helps-address-protracted-humanitarian-crisis-baidoa>.

In Baidoa, many arriving IDPs have come from distant locations which were not reachable during previous vaccination efforts in the past

In light of this context, mass vaccination campaigns are an essential intervention to reach newly arrived IDPs—who likely have not had access to vaccination or health care over years—and the rest of the population. With the aim of preventing preventable illness and death, as had been observed in recent years, MSF aimed to support a mass vaccination campaign before the peak measles season. In conjunction with MoH (Ministry of Health) SWSS (South West State Somalia), the campaign was planned for October 2023, targeting 352,004 children under the age of ten for measles and 262,364 under seven for the pentavalent vaccine—which includes 5 antigens—for Baidoa's host and IDP populations. There was agreement that these activities were needed, that the proposed intervention would take place, and that supply would be made available. However, there was no supply made available. Thus, the campaign did not take place, a significant missed opportunity.

In contexts like Baidoa, MSF and other humanitarians are faced with the urgent need to repeatedly and continuously respond to high numbers of disease preventable admissions in order to save lives—in crisis contexts with a plethora of urgent, life-saving care needs—due to the limitations and gaps of global supply chains and response mechanisms.

2.3. DRC

The Democratic Republic of Congo (DRC) faced significant vaccination challenges well before the Covid-19 crisis, driven by decades of conflict and limited access to quality health care. The 2019 measles outbreak was catastrophic, resulting in the more than 6,000 reported deaths, mainly of whom were children under five³⁰. Unfortunately, MSF continues to observe many of the same challenges and issues five years later, and continues to respond at a significant scale across the country with vaccination and outbreak response.

UNICEF/WHO³¹ reports 52% measles coverage in DRC, with only 18% receiving the second dose³². Notably, in 2023, only 38% are fully immunised, a reduction from 45% in 2022. In DRC, there are reportedly 839,000³³ zero-dose children (22%) and approximately 2 million children unvaccinated against measles³⁴. In 2023, the country reported 311,500 measles cases, 474 total tetanus, 600 pertussis, 38 diphtheria, 223 for polio and 15 for yellow fever³⁵. Suspected cases are not included in this figure, and overall, there are likely more cases.

30 Ducomble, T. and Gignoux, E. (May 2020). 'Learning from a massive epidemic: measles in DRC'. *The Lancet Infectious Diseases*. Volume 20. Issue 5. p. 542. Available at: [https://www.thelancet.com/journals/laninf/article/PIIS1473-3099\(20\)30265-6/fulltext](https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(20)30265-6/fulltext)

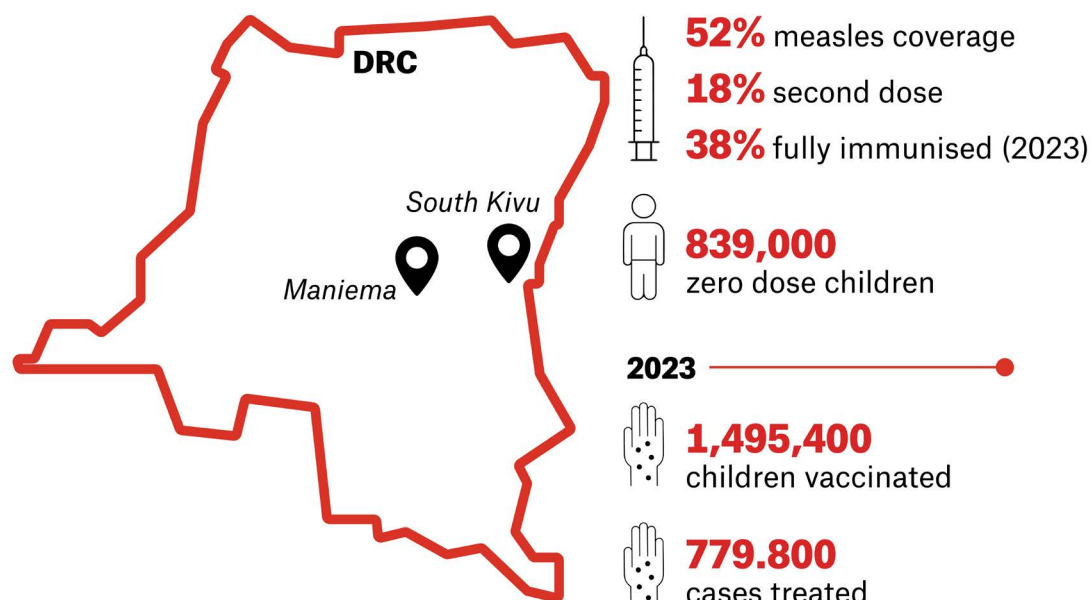
31 UNICEF/WHO (14 July 2024). *Country immunization profiles: Democratic Republic of the Congo*. Available at: <https://data.unicef.org/wp-content/uploads/2024/07/cod.zip>.

32 Significantly lower than the 95% threshold required to achieve herd immunity.

33 Without DPT1 dose.

34 WHO (July 15, 2024). Immunization coverage. *Op. Cit.*

35 WHO (Last accessed September 2, 2024). *Immunization data portal: Africa region*. Available at: <https://immunizationdata.who.int/dashboard/regions/african-region/COD>.



In DRC, there are approximately 839,000 zero-dose children and about 2 million unvaccinated against measles

In 2023 alone, MSF vaccinated 1,495,400 children against measles and treated 779,800 measles cases³⁶. MSF Spain provided treatment for nearly 9,000 people for measles, with 39 deaths and supported a measles reactive vaccination campaign which covered 38,962 people. However, in conducting vaccination activities, MSF faces many challenges including conflict-related and physical access barriers due to the poor quality of roads, and important logistics challenges. Often barriers are multiple, such as when there is intensification of violence in a difficult to reach area, as was the case in Kalole in 2023 when we could not complete vaccination activities due to active conflict. This may impede access altogether, or significantly increase the cost of an intervention³⁷.

Despite these challenges, in DRC, MSF has been afforded important operational space and afforded adaptations to enable effective response including: use of the MoH (Ministry of Health) vaccination supply and to import our own vaccines (varicella, oral cholera vaccine) for some activities³⁸, extension of age group coverage for reactive campaigns and up to 24 months for EPI, multi-antigen campaigns when possible (generally at least 2 antigens) and to conduct preventative and outbreak response activities³⁹. This operational space has been critical to prevent illness and death.

³⁶ MSF (July 2024). International Activity Report 2023. *Op. Cit.*

³⁷ This includes where a helicopter or airplane is needed for supply due to access challenges. According to last real costs data (although there is still pending some data to close definitely the project) the Costs of Transport in Kampene vaccination project (basically Freights and rent of motorbikes) represents the 33% of the total cost of the project. To have a comparison criterion, in 2023 the average cost of these kind of costs in all OCBA projects were around 4%. This demonstrates the difficulty of access, and the number of resources required to access the vaccination area.

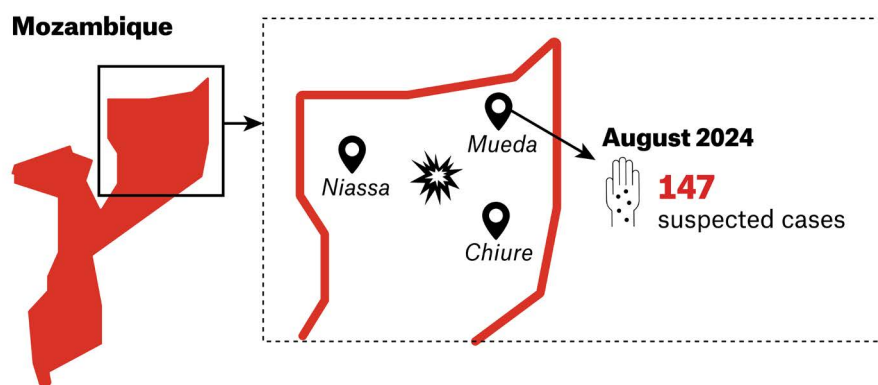
³⁸ Depending on the antigen, specific outbreak, or activities.

³⁹ This includes both vaccination and case management.

However, in light of the high birth rate⁴⁰ and chronically low coverage rates, significant additional efforts are needed to improve and scale up the PEV (WHO Expanded Programme on Immunization), and mechanisms to ensure quality and adequate coverage when outbreak responses take place (regardless of which partners implement activities), including reaching hard-to-reach areas and cold chain functionality.

2.4. Cabo Delgado, Mozambique

An important limitation has been non-availability of vaccinations from the central level and barriers for importation



Since late 2017, the conflict in northern Mozambique has had disastrous impact on the population and has severely weakened the health system, due to the scale of violence and displacement⁴¹. Among other health challenges⁴², access to routine vaccination activities has been severely disrupted.⁴³

MSF has observed —and supported responses to— measles and cholera outbreaks since the conflict began in Cabo Delgado. However, an important limitation has been non-availability of vaccinations from the central level and barriers for importation; this means that thus far only case management has been possible, and there have continued to be measles cases during the last 13 months (first cases registered August 2023), as transmission has not been cut by vaccination. Over the last year, we have observed suspected measles cases in several areas in northern Mozambique where there are high rates of

⁴⁰ The birth rate was reported to be 6.1 in 2022. See World Bank. *Total fertility rate (births per woman) - Democratic Republic of Congo*. Available at: <https://data.worldbank.org/indicator/SP.DYN.TFRT.IN?locations=CD>

⁴¹ OCHA (17 de marzo de 2024). *Mozambique: Displacement in Northern Cabo Delgado – Situation Report No. 1* (as of 15 March 2024). Disponible en: <https://www.unocha.org/publications/report/mozambique/mozambique-displacement-northern-cabo-delgado-situation-report-no-1-15-march-2024>

⁴² In addition to important unmet vaccination needs, MSF has observed important HIV and TB needs as services have likewise been disrupted by the conflict.

⁴³ Mozambique faces low vaccination coverage rates, with WEUNIC reporting 65% MCV1 coverage in 2023. While coverage rates are concerningly low, MSF is concerned that there may be even lower coverage rates in areas more impacted by conflict and more difficult to access.

displacement, including Mueda and Chiure. As of August, in 2024 alone, we have received 147 suspected cases in our facilities in Mueda, likely only a portion of the actual cases⁴⁴.

The conflict creates significant response barriers —due to insecurity and other access barriers. When insecurity worsens, the population cannot easily move, including to access health care, and at the same time, MSF and other actors are unable to conduct health activities at the community and primary care level. As such, it is critical to take every opportunity to vaccinate and to implement effective outbreak response, which requires a ready supply of vaccination and logistics capabilities.

Conflict and consequent displacement require an adapted response, including providing services where IDPs have relocated to the extent possible. In Northern Mozambique, populations have fled/relocated, and now many have returned to their villages. Catch up activities must be available to the population who has suffered direct and indirect consequences of the conflict, including risk of and cases of vaccine preventable illness.

In some cases, it would be expedient to provide vaccination supply directly to humanitarian and response actors operating in conflict areas. In addition —in cases where there is no supply available— importation requirements and rules should be made enabling for humanitarian actors to allow response in conflict areas. In Mozambique, humanitarians face significant bureaucracy in response activities, including an extremely long lead time for importation, and other challenges. This delay is not conducive for outbreak response activities, nor to be able to provide vaccination opportunistically in hard-to-reach areas, a response which MSF can provide while we are conducting other health interventions, as appropriate.

It is critical to take every opportunity to vaccinate, which requires a ready supply of vaccination and logistics capabilities

3

CONCLUSION AND RECOMMENDATIONS

MSF recommends urgent action to review and strengthen the manner and mechanisms which support and impede vaccination and outbreak response activities in conflict and humanitarian settings, and solutions to address them.

Donors and vaccination actors should:

- a. Ensure meaningful humanitarian space within vaccination planning, strategies and implementation of activities:
- b. Create and ensure space for open dialogue between actors for discussion prior to, during and after responses (including reactive campaigns), to encourage transparency and

⁴⁴ In addition to significant access barriers faced by the population, in 2024 we had no choice but to temporarily halt community activities due to insecurity. In Nyasa there have also been measles alerts, an area where there were previously (suspected/probable) cholera cases.

accountability around challenges and gaps, to enable better estimation of future risk and to meaningfully improve responses. Decisions must be made based on data not just the implementation of activities.

- c. Ensure existence and implementation of mechanisms to ensure rapid, impartial, and effective response in conflict and humanitarian settings.
 - Supply chain agreements at all needed levels to enable humanitarian actors to respond, at minimum, to outbreak response (use of UNICEF supply, and to import own supply)
 - Pre-agreements for at minimum, humanitarian and other actors:
 - To conduct outbreak response activities and
 - To support catch up and preventative activities in operational areas or other needed zones.
 - Assurance and support operational capacity/partnership with humanitarian actors
- d. Identify, finance, and urgently operationalise and scale up intervention models which improve the provision of information, access to vaccination and related health services, and outbreak response interventions for populations in conflict and complex settings
- e. Review of financial mechanisms and co-financing, and decision making as pertains to vaccination and response activities in conflict and humanitarian settings, to ensure flexibility of responses and with a view towards ensuring greater involvement of humanitarian actors in decision making and response activities.
- f. Adapt Gavi's operational model to ensure it is fit-for-purpose in reaching children in humanitarian, conflict, and fragile settings. This includes:
 - 1. Making vaccine support for children up to age five a permanent Gavi policy for all relevant vaccines.
 - 2. Developing framework agreements with governments to guarantee that NGOs can quickly and efficiently engage in vaccination activities in hard-to-reach areas.
 - 3. Enable the creation of in-country stocks of vaccine doses to which NGOs have swift and unhindered access when undertaking vaccination activities, including for reactive outbreak campaigns, and for people in hard-to-reach areas.
 - 4. Improve supervision and accountability to ensure adequate coverage and quality of campaigns financed by Gavi.
- g. Adapt Gavi's FED policy to allow for tailored, flexible and agile approaches to reach populations in fragile, conflict and humanitarian settings.

It is essential to strengthen the mechanisms that support immunisation activities in complex settings

Governments should:

- a. Address bureaucratic and other regulatory barriers that impede health and humanitarian actors from conducting vaccination activities including policy, supply chain, and strategy barriers.
- b. Ensure meaningful humanitarian space/role within vaccination planning, strategies and implementation of activities.
- c. Ensure adequate investment in EPI programmes, catch up, and outbreak response activities, including taking strategic and programmatic measures to reach un and under-vaccinated children in conflict and humanitarian areas.
- d. Ensure that mechanisms are in place to implement quality and effective responses in hard-to reach areas which provide adequate coverage for all activities, including outbreak responses and catch up. This includes cold chain functionality and adequate monitoring of response efficacy.

**Governments must
address the barriers
that prevent
humanitarian actors
from carrying out
vaccination activities**

PHOTO:

**Measles vaccination in Mai-
Ndombe Province
Loading of the material for
vaccination in the village of
Kwamouth.**

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