

IA2030 Technical Progress Report 2023

This document provides a brief commentary on the most recent global immunization data and an update on implementation of the Immunization Agenda 2030 (IA2030). SAGE is asked to:

- *Comment on the immunization data.*
- *Endorse the shared action agenda.*

Foreword

We are delighted to present the Immunization Agenda 2030 (IA2030) Technical Progress Report for 2023. The Report presents global and regional immunization data for 2022, providing a snapshot of the state of vaccines and immunization around the world, and briefly summarizes activities that are being organized at national, regional and global levels to increase coverage and thereby to protect children, adolescents and adults from vaccine-preventable diseases.

IA2030 was endorsed by the World Health Assembly in 2020¹. The IA2030 Framework for Action includes a monitoring and evaluation (M&E) framework, with multiple indicators for key aspects of vaccines and immunization programme performance. The M&E framework also includes global targets for these indicators to be reached by 2030. This Technical Progress Report collates M&E data for 2022 and provides a comparison to data for 2021 and to a baseline year (usually 2019).

The launch of the IA2030 strategic period in 2021 coincided with the onset of the COVID-19 pandemic, the most severe pandemic for a century. This had a serious detrimental impact on immunization coverage in most countries. As the data in this Report indicate, there are signs of recovery – but the recovery is incomplete and is not underway everywhere. The action agenda included in this report provides a high-level and short-term set of priorities for countries, regions and global partners to rally around and build further on the momentum achieved in 2022.

As further discussed here, the Big Catch-Up, launched by WHO, UNICEF, Gavi and other IA2030 partners, is leading the way in promoting three key achievements: to reach children who were missed during the COVID-19 years, to recover programme performance back to at least pre-pandemic levels, and to strengthen programmes to reduce the numbers missed in the future. As representatives of global partners, we reaffirm our commitment to working together in support of countries to ensure that everyone, everywhere at every age fully benefits from vaccines for good health and well-being.

IA2030 Coordination Group

August 2023

¹ <https://www.who.int/news-room/feature-stories/detail/73rd-world-health-assembly-decisions>

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A. Executive summary

Global immunization coverage levels showed an encouraging upward turn in 2022, with coverage of DTP3 (three doses of diphtheria, tetanus and pertussis vaccine) reaching 84%. However, coverage has yet to return to 2019 pre-pandemic levels (86%), and recovery has been highly uneven, with many countries yet to turn the corner and some continuing to show declining coverage.

Regionally, the South-East Asia Region saw a marked rebound in coverage of DTP3 (from 82% to 91%) and MCV1 (from 86% to 92%) in 2022 compared to 2021, with increases also seen in all other regions except the Africa Region – low-income countries in general are yet to see significant recovery.

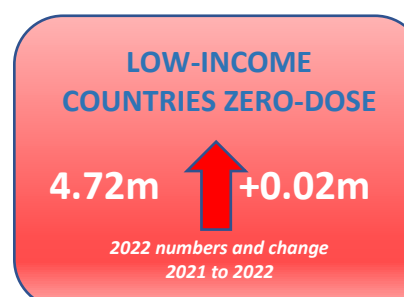
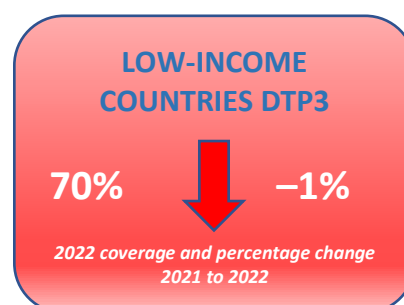
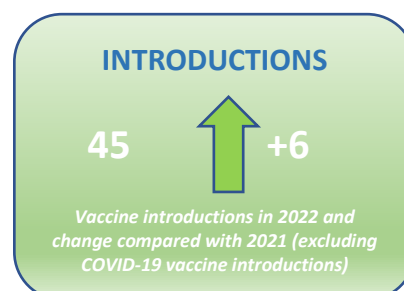
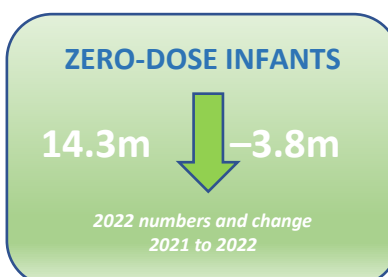
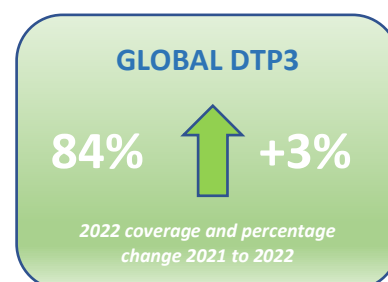
Global DTP3 coverage, the key indicator used to assess infant vaccination coverage, rose 3% (from 81% to 84%). However, it remains below the coverage of 86% achieved in baseline year 2019.

Encouraging trends were also seen in the numbers of zero-dose children, those not receiving any doses of DTP, which fell from 18.1 million in 2021 to 14.3 million in 2022 – a drop of 3.8 million. However, the numbers of zero-dose children are still higher than those seen in baseline year 2019 (12.9 million). The global target is to reduce this number to 6.2 million by 2030.

Vaccination patterns for measles are more concerning. Global coverage of the first dose of measles-containing vaccine (MCV1) rose from 81% in 2021 to 83% in 2022, but remains lower than the 86% coverage achieved in baseline year 2019, which was already well below the target of at least 95% needed to prevent outbreaks. In 2022, 21.9 million children did not receive measles vaccination in the first year of life, 2.7 million more than in 2019.

Uneven gains

Furthermore, global averages hide considerable variation in recovery between regions and countries. In the South-East Asia Region, for example, which saw significant pandemic era backsliding, DTP1 and DTP3 coverage both exceeded 2019 baselines. MCV1 and MCV2 coverage also returned to 2019 baseline levels, the former increasing from 86% to 92% and the latter from 78% to 85% between 2021 and 2022. Pneumococcal conjugate vaccine (PCV3) coverage leapt from 29% in 2021 to 58%.



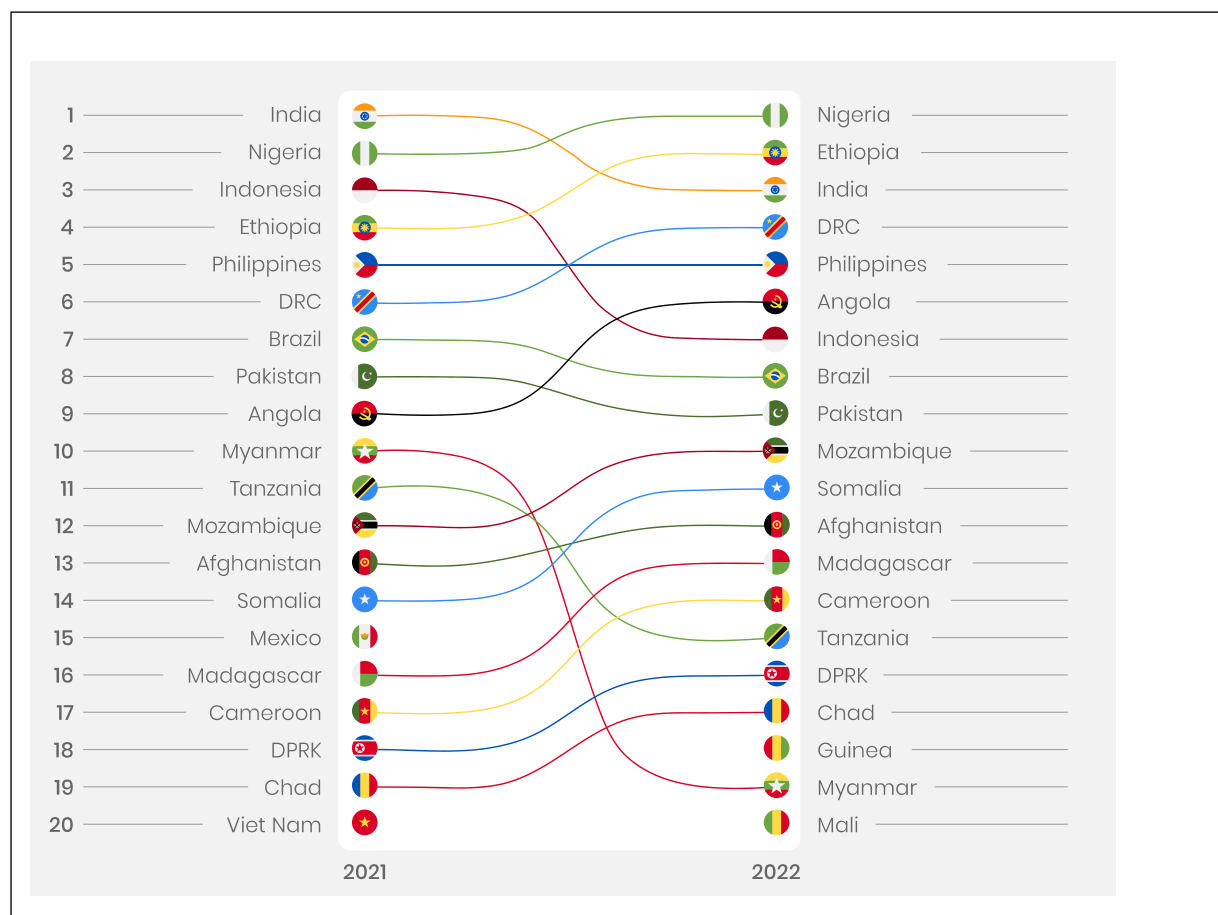


Figure 1. Countries ranked according to absolute number of zero-dose children, 2021 versus 2022.

Excellent progress in two countries with large populations, **India** and **Indonesia**, accounts for much of the change in the South-East Asia Region (and globally, with India accounting for 40% of the decline in the total number of zero-dose children worldwide; Figure 1). In addition, Sri Lanka and Nepal managed to reduce the numbers of zero-dose children by 50% and 38%, respectively, between 2021 and 2022. Progress was also seen in countries such as Bangladesh, Bhutan and Maldives, which returned to pre-pandemic coverage levels.

Elsewhere the coverage trend was not so positive. Data from the 57 lower middle-income and low-income countries supported by **Gavi** show a mixed picture in 2022, with the outlook particularly challenging for low-income countries, most of which are in the African Region.

Encouragingly, as was found globally, DTP3 coverage increased overall by 3% over 2021 in Gavi-supported countries, reaching 81% in 2022. Almost half of these countries have returned to pre-pandemic coverage levels and the number of children immunized in 2022 was almost the same as in 2019 (61.1 million versus 61.6 million, respectively). The number of zero-dose children in Gavi-supported countries fell by 17%, from 12.4 million to 10.2 million (although remains higher than the 9.0 million seen in 2019).

However, taken a group there was **no increase in DTP3 coverage across 26 low-income countries**, with eight showing increased coverage, eight decreased coverage and 10 no change compared to 2021.

Even so, good recovery in DTP3 coverage was seen in several countries, including Liberia (up 12% to 78%), Rwanda (up 10% to 98%) and Mauritania (up 8% to 76%). Coverage dropped 9% in Zambia and 8% in Malawi, although in both cases remained above the Gavi average of 81%.

Fragility and insecurity continue to have a major impact, with DTP3 coverage typically lower in affected countries. Some progress has been achieved – for example, in the 13 Gavi countries classified as fragile, DTP3 coverage increased by 2% to 69% in 2022. Four of the countries with the lowest DTP3 coverage rates globally – Central African Republic, Papua New Guinea, Somalia and Syrian Arab Republic – fall into this category.

Positive progress was also seen in **former Gavi countries**, with DTP3 coverage increasing by 9% overall. However, average coverage in these countries, 79%, is still below the average for currently Gavi-supported countries.

Responses

As evidenced by the numbers discussed above, the backsliding seen in 2020 and 2021 has catalysed efforts in many countries to catch up the children who missed vaccinations in the pandemic years, and to restore coverage to pre-pandemic levels. In addition, an easing of the challenges presented by the COVID-19 pandemic has facilitated this rebound. For example, the number of campaigns postponed because of the pandemic has fallen substantially, while the number of new non-COVID-19 vaccine introductions in low- and middle-income countries, several of which were halted because of COVID-19, increased in 2022 compared to 2021. As discussed above, these efforts have contributed to the global coverage improvements reported above.

However, DTP3 coverage increased in only 67 countries (34.5%) in 2022 compared to 2021. Across countries with low DTP3 coverage (<90%) in 2021, coverage increased in a slightly higher proportion of countries (45.2%). Similarly, the numbers of zero-dose children decreased in 77 countries (39.7%) in 2022 compared to 2021. **The recovery is therefore only in an early phase, and yet to take root everywhere.**

To support country efforts, in 2023 global partners launched the **Big Catch-Up** advocacy and communication initiative, to promote efforts to reach children who were missed during the COVID-19 years, to recover programme performance back to at least pre-pandemic levels, and to strengthen programmes to reduce the numbers missed in the future. With a focus on the 20 countries with the greatest numbers of zero-dose children, this intensification effort has included technical assistance to support the development of country-led recovery and programme-strengthening plans, promoting policy change to enable immunization of older children, advocacy for investment in immunization programmes within primary healthcare systems, and advice on mobilizing existing sources of funding available to support these activities. In addition, the Measles and Rubella Partnership (M&RP) has identified 20 priority countries that require assistance to reach measles and rubella goals.

Another important focus has been on **human papillomavirus (HPV) vaccination**. While HPV two-dose vaccine coverage increased slightly in 2022, from 14% in 2021 to 15%, this still leaves the vast majority of young women unprotected against cervical cancer in later life. Moreover, low- and middle-income countries face by far the highest burden of cervical cancer. Gavi and partners have launched an initiative to **revitalize HPV vaccination**, through accelerated HPV vaccine introductions and enhancing coverage where the vaccine has already been introduced. Globally, a further 26 countries, which collectively account for more than a quarter of the cervical cancer disease burden, are scheduled to introduce HPV vaccine in 2023–2025.

Countries have continued to develop their **National Immunization Strategies** aligned with IA2030, with 23 developed by the end of 2022 and 18 additional countries in the development phase. At the country and regional levels, partners have been coordinating tailored support according to country needs.

Maintaining the momentum

Encouragingly, 2022 saw an uptick in global vaccine coverage – a sign that the damage from the COVID-19 pandemic is beginning to be repaired. However, this is no time to be complacent. Recovery so far has not yet fully returned immunization programme performance to where it was in 2019. Furthermore, recovery has been uneven, with most low-income countries yet to see a significant rebound.

Indeed, between 2021 and 2022, **DTP3 coverage increased in just 30.8% of low-income countries (8/26 countries)** and decreased in the same number. **DTP coverage therefore declined in almost a third of low-income countries.** Falls were also seen in 22.2% of lower middle-income countries (12/54 countries) and 25% of upper middle-income countries (13/52 countries). As at the end of 2022, DTP3 coverage was lower than baseline (coverage in 2019) in 57.7% of low-income countries, 57.4% of lower middle-income countries and 55.8% of upper middle-income countries, compared with 44.1% of high-income countries.

With regard to measles as a tracer of immunization programme strength, cases and outbreaks have been rising due to low coverage, delays to campaign implementation and other policy factors. Outbreaks are most frequent and most devastating in areas of stark inequity. During the IA2030 baseline year of 2019, the number of measles cases worldwide was the highest for many years, reflecting programme deficiencies and accumulation of large groups of non-immune individuals, including in older age groups. Just returning to 2019 levels of coverage will not be sufficient to make progress on country, regional or global goals, emphasizing the need for concerted effort to galvanize political will and mobilize resources at all three levels of action.

Within countries, the key indicator for equitable coverage, DTP3 coverage in the 20% of districts with the lowest coverage, shows no signs of improvement – suggesting that the most disadvantaged communities are still not being reached effectively.

Data for 2022 included in the IA2030 Technical Progress Report provide encouragement that progress is possible – but also emphasize that current efforts must be maintained and intensified if 2030 immunization targets are to be achieved.

B. Shared action agenda 2023/2024

The IA2030 shared action agenda 2023/2024 sets out a series of short-term (one to two years) and high-level priorities, to align the efforts of countries, regions, global partners and other stakeholders.

It is intended that all IA2030 stakeholders will consider how **best to move with urgency in these areas**, given their local contexts and specific remits, and using IA2030 as a guiding framework, particularly its core principles – **partnership-based, country-owned, data-guided and people-focused**:

1. **Catch-up and strengthening:** Intensify efforts to reach children missed during the pandemic years and strengthen national immunization programmes, for all vaccination needs across the life-course.
2. **Promoting equity:** Ensure that catch-up and strengthening activities specifically benefit communities that are currently most left out.
3. **Regaining control of measles:** Enhance measles outbreak responses and intensify prevention, especially within the context of sustainable strengthened national immunization programmes.
4. **Making the case for investment:** Strengthen advocacy at national, regional and global levels for increased investment in immunization, through primary healthcare and as part of systems for health.
5. **Accelerate new vaccine introductions:** Promote implementation of WHO-recommended vaccines where they have yet to be introduced.
6. **Advance vaccination in adolescence:** Accelerate introduction of HPV vaccination where it is not yet in national programmes and increase coverage where it has already been introduced.

This shared action agenda is based on the list of overarching IA2030 recommendations that were set out in the 2022 Technical Progress Report and endorsed by SAGE, and has been revised in response to most recent data, following input from regions, IA2030 Working Groups, and the IA2030 Coordination Group.

Other items on the 2022 list remain important, but highest priority for the coming one to two years has been attached to those listed above.

Taking forward the action agenda:

Countries:

- Countries are urged to **draw inspiration** from their peers that have managed to increase coverage and reduce equity gaps post-pandemic.
- The **National Immunization Strategy (NIS)** mechanism provides a means for operationalizing the IA2030 framework, including robust monitoring, evaluation and action (ME&A cycles).
- The NIS and other approaches provide tools to **systematically identify priority areas** for strengthening of national immunization programmes.
- Although all countries have multiple competing priorities, **investment in immunization** and primary healthcare remains critical to future health and prosperity, a vital step towards universal health coverage, and will deliver outstanding return in investment.

Communities and CSOs:

- Efforts at all levels, from the most local to the global, should be informed by and developed in partnership with community representatives and civil society organizations (CSOs), respecting the adage “nothing about us without us”.

Regions:

- Regional structures are well placed to **support countries** in responding to their challenges through the development of **tailored approaches**.
- Mechanisms such as **Regional Working Groups** (see page 50) could provide an opportunity to coordinate and target technical support to countries, integrated within regional ME&A processes and with input from **Regional Immunization Technical Advisory Groups**.

Global partners, including IA2030 Working Groups:

- Global partners need to increasingly come together to **facilitate and empower** work at the regional and country levels, with a particular focus on countries with high numbers of zero-dose and under-vaccinated children, persistent challenges with vaccine-preventable diseases, and a history of limited progress in improving coverage.
- The **IA2030 Coordination Group** will establish annual workplans that set out its intended contributions to taking forward the action agenda.
- Within their specialist areas, **IA2030 Working Groups** can support efforts to take forward the shared action agenda, as a source of technical expertise and action, including in areas such as advocacy and monitoring and evaluation.

In-depth reviews

The IA2030 Coordination Group has identified a range of areas where **in-depth reviews** could be undertaken by IA2030 Working Groups to generate more specific recommendations for global, regional and national partners. These are **preliminary ideas** and the scope of these in-depth reviews will be refined in consultation with Coordination Group members. The list will then be prioritized and discussed with the relevant Working Groups.

- **Catch up:**
 - Restore and recovery action plans for the priority countries – accelerate integrated catch-up in priority countries.
 - Setting up resilient health systems in countries in pandemic prevention, preparedness and response efforts.
 - Multi-partner action plan for integrated campaigns.

- **Equity:**
 - Triangulating DHS and other data to map zero-dose communities.
 - Immunization in fragile and conflict setting, as solutions and approaches differ from other settings.
 - Data improvement plans and strategies that countries are pursuing (including triangulation of data on outbreaks and coverage and strategies being used for identification and inclusion of zero-dose children).

- **Elimination of measles:**
 - Reasons for lagging measles coverage.
 - Understanding the dynamics behind disruptive measles outbreaks and what can be done to reverse the trend.

- **Prioritizing health:**
 - Country case studies on data use for action.
 - How to support country leadership in understanding local market dynamics/demand/use cases and the economic, social, political and cultural factors that impede access/uptake.

- **Vaccine development:**
 - How regions and countries can contribute to development of new vaccines for their priorities.
 - New vaccines.

- **Adolescence:**
 - HPV vaccine total coverage and school attendance to inform the size of “out of school” immunization challenge by country.

It is anticipated that in-depth reviews will focus on developing **actionable recommendations** for national and regional stakeholders and global partners. In-depth reviews will undergo a rigorous scoping process and will be presented to SAGE for expert technical input.

C. Introduction

The Immunization Agenda 2030 (IA2030), the global immunization strategy for 2021–2030, was formally endorsed by the World Health Assembly in 2020. It sets out a vision for immunization in which everyone, everywhere at every age fully benefits from vaccines for good health and well-being.

In order to track progress, IA2030’s Framework for Action includes a comprehensive monitoring and evaluation (M&E) framework. This includes three **impact goals** derived from the IA2030 vision statement:

Box 1: IA2030 impact goals and targets

IA2030 Impact Goals	Targets
1 Reduce mortality and morbidity from vaccine-preventable diseases for everyone throughout the life course	1.1 50 million future deaths averted globally
	1.2 All countries achieve the endorsed VPD control, elimination and eradication targets
	1.3 All selected VPDs have a declining trend in the number of large or disruptive outbreaks
2 Leave no one behind, by increasing equitable access and use of new and existing vaccines	2.1 50% reduction in the number of zero dose children
	2.2 500 vaccine introductions in low- and middle- income countries
3 Ensure good health and well-being for everyone by strengthening immunisation within primary health care and contributing to universal health coverage and sustainable development	3.1 90% global coverage for DTP3, MCV2, PCV3, and HPVc
	3.2 Improve Universal Health Coverage

The M&E framework also includes a wide range of **indicators linked to IA2030’s strategic priorities**, which emphasize key aspects of successful immunization programmes. The framework incorporates **targets for 2030 for impact goal indicators**. Targets have not been set for strategic priority indicators, owing to wide geographic variation.

Regions have developed, or are developing, **regional strategies and frameworks** aligned with the global IA2030 strategy. These are associated with regional M&E frameworks, providing the basis for data use to inform decision-making through regional ME&A cycles.

Progress since launch

The launch of IA2030 coincided with the onset of the **COVID-19 pandemic**, which has had a significant impact on immunization (and other health services). Immunization service delivery was significantly disrupted in multiple countries, while public health and social distancing measures, as well as fear of infection, led to a drop in health service-seeking behaviour. Furthermore, the response to the pandemic, including the roll-out of COVID-19 vaccines, drew attention and resources away from other essential immunization services in many settings.

Successive **WHO Pulse surveys** have documented the extent of disruption to health services caused by the pandemic. Even early in 2023, 84% of countries (105 out of 125 responding) reported some extent of

disruption to at least one health service, and on average countries reported disruption to a quarter of tracer services². Immunization was ranked third highest in terms of service disruption, reported by 30% of countries.

These factors typically led to a drop in immunization coverage and other vaccination indicators in 2020 and 2021, compared with the baseline year of 2019. For example, rather than declining, as envisaged to achieve 2030 targets, the numbers of “zero-dose” children (those not receiving any doses of DTP, the key tracer of infant immunization) has been rising, to 18.1 million in 2021 compared to 12.9 million in 2019 (Figure 1).

COVID-19 has not been the only factor affecting immunization coverage. Many countries are facing multiple concurrent crises and severe **economic challenges** (in part due to the COVID-19 pandemic, but also resulting from the impact of the war in Ukraine and other geopolitical instability, the growing impact of climate change, and other economic shocks). The World Bank’s ongoing “From Double Shock to Double Recovery” health financing series³ indicates that governments, on average, prioritized health during the first two years of the pandemic but lost this momentum in the third year of the pandemic, with a strong contraction in spending. In 2022, governments had to contend with new spending demands and many health systems are struggling. This is particularly worrisome in countries with concerning macroeconomic prospects.

Furthermore, in 2023, 17 countries were classified by the World Bank as being **conflict settings**, and a further 19 were categorized as suffering “institutional and social fragility”⁴. The numbers of **forcibly displaced people** continue to rise, reaching 108.4 million by the end of 2022 (Figure 2) – almost triple the number seen in 2011⁵. Internally displaced people account for 62.5 million of this total. These community and population realities pose profound challenges to the delivery of immunization and other primary healthcare services.

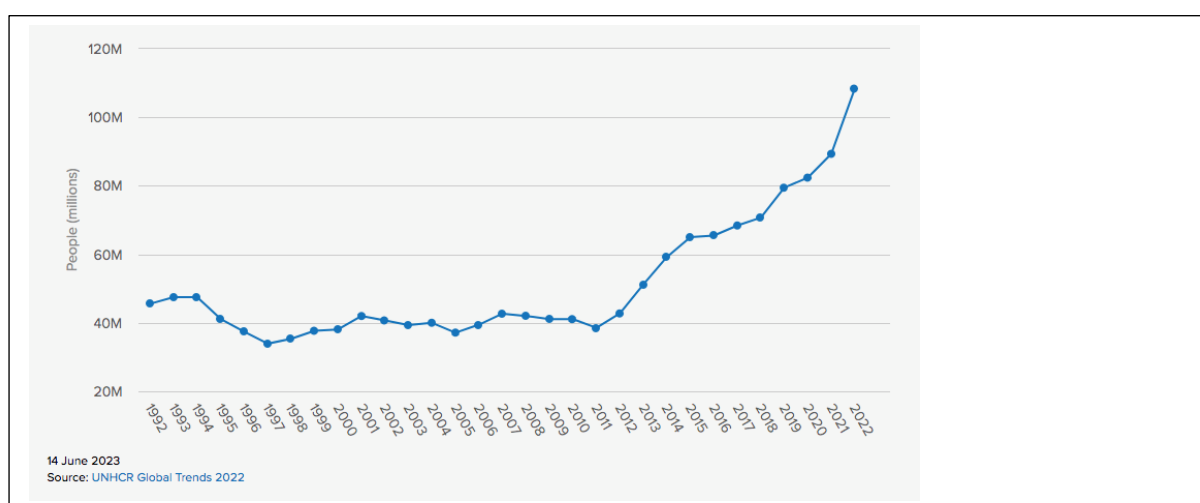


Figure 2. Growth in the numbers of forcibly displaced people.

At the same time, a new birth cohort arrives each year – requiring vaccination of an estimated 134 million new babies in 2022⁶. Although the estimated size of the global birth cohort has been gradually declining over the

² [https://cdn.who.int/media/docs/default-source/integrated-health-services-\(ihs\)/hsa/pulse-survey-r4/round-4-pulse_presentation-of-summary-results.pdf?sfvrsn=6a9895cd_4](https://cdn.who.int/media/docs/default-source/integrated-health-services-(ihs)/hsa/pulse-survey-r4/round-4-pulse_presentation-of-summary-results.pdf?sfvrsn=6a9895cd_4)

³ <https://www.worldbank.org/en/topic/health/publication/from-double-shock-to-double-recovery-health-financing-in-the-time-of-covid-19>

⁴ <https://www.worldbank.org/en/topic/fragilityconflictviolence/brief/harmonized-list-of-fragile-situations>

⁵ <https://www.unhcr.org/about-unhcr/who-we-are/figures-glance>

⁶ <https://ourworldindata.org/births-and-deaths>

past decade, the size of the birth cohort continues to grow in Africa, increasing to 45.4 million in 2021, more than 5 million more than a decade earlier, and to a lesser extent in the Eastern Mediterranean Region.

Immunization data for 2022 reported here need to be interpreted against this challenging backdrop. Furthermore, there is a need to dig beneath the headline numbers to understand differences between regions and, within regions, differences between individual countries.

Box 2: Immunization data reporting

The global IA2030 monitoring and evaluation framework¹, part of the IA2030 Framework for Action, includes a set of indicators against which progress towards 2030 targets is tracked. Most of the data relating to these indicators is collected from countries using the electronic **Joint Reporting Form (eJRF)**. These data are reviewed and quality-assured within WHO and by countries before being publicly released jointly by WHO and UNICEF (WUENIC data release).

Data for other indicators are collated from a wide range of other sources and verified in dialogue with technical focal points within WHO, UNICEF and other partner organizations. Data analyses and visualizations are also discussed with WHO and UNICEF Regional Offices before publication in the Technical Progress Report.

Most data in the Technical Progress Report are also made available in an interactive form through the online **IA2030 Scorecard** (<https://scorecard.immunizationagenda2030.org/>). The Scorecard also provides the latest year's data from individual countries.

The IA2030 Working Groups on Data Strengthening and Use, and on Monitoring and Evaluation, are continuing to assess the relevance, timeliness and quality of immunization data, and its use to inform decision-making at national, regional and global levels.

D. Immunization in 2022

D1. Impact goal indicators

The **seven IA2030 impact goal indicators** (Table 1) are outcome and impact measures common across all levels (country, regional and global) and are designed to track progress towards the three IA2030 impact goals. Progress is assessed against global targets for 2030.

Progress towards IA2030 impact goals – take-home messages

- An estimated 4.1 million deaths were averted by vaccination in 2022, 9.3% fewer than initially targeted.
- Only modest progress has been made towards globally and regionally endorsed disease eradication and elimination targets.
- A greater number of large and disruptive measles, cholera and meningococcal outbreaks were seen in 2022 compared to 2021.
- The number of DTP zero-dose children decreased to 14.3 million in 2022 (18.1 million in 2021) but remains above the 2019 baseline (12.9 million).
- Introduction of new and under-utilized vaccines (excluding COVID-19 introductions) in low- and middle-income countries increased, from 25 in 2021 to 46 in 2022, particularly in low-income countries.
- Global coverage of the four indicators of vaccination across the life-course (DTP3, MCV2, PCV3 and HPVc) increased in 2022 compared to 2021, and all except DTP3 now exceed 2019 baseline levels.
- The universal health coverage Index of Service Coverage indicator in 2021 was unchanged at the global level from baseline, but with marked variation between countries.
- In general, progress was uneven globally, being strongest in the South-East Asia Region and weakest in the African Region and among low-income countries.

Table 1: IA2030 Impact Goal (IG) indicators and targets, baseline and 2022 data

Impact Goal	Indicator	2030 target	2022 Progress from baseline* <i>Unless otherwise noted, 2019 is the baseline</i>																															
1 Prevent disease	1.1 Number of future deaths averted through immunization	50 million future deaths averted by immunization in 2021-2030†	<p>2030 target: 50 M 12.22 M (cumulative, 2020-2022) 4.10 M in 2022 (9.3% lower than annual target)</p>																															
	1.2 Number and proportion of countries achieving regional or global VPD control, elimination, and eradication targets	All countries achieve targets Eradication target for polio (WPV) and elimination targets for measles, rubella and maternal and neonatal tetanus (MNT). Additional VPD targets may be added in future years.	<p>WPV: 99% (192 out of 194) Measles: 43% (83 out of 194) Rubella: 51% (98 out of 194) MNT: 94% (182 out of 194)</p>																															
	1.3 Number of large or disruptive VPD outbreaks	Declining trend in the annual number of large or disruptive VPD outbreaks	<table border="1"> <thead> <tr> <th>VPD</th> <th>2018-2020 annual avg.</th> <th>2022</th> <th>Trend</th> </tr> </thead> <tbody> <tr> <td>Cholera</td> <td>1</td> <td>5</td> <td>↑</td> </tr> <tr> <td>Ebola</td> <td>1</td> <td>0</td> <td>↓</td> </tr> <tr> <td>Measles</td> <td>51</td> <td>37</td> <td>↓</td> </tr> <tr> <td>Meningococcus</td> <td>2</td> <td>4</td> <td>↑</td> </tr> <tr> <td>cVDPV</td> <td>22</td> <td>32</td> <td>↑</td> </tr> <tr> <td>WPV</td> <td>2</td> <td>3</td> <td>↑</td> </tr> <tr> <td>Yellow Fever</td> <td>4</td> <td>1</td> <td>↓</td> </tr> </tbody> </table>	VPD	2018-2020 annual avg.	2022	Trend	Cholera	1	5	↑	Ebola	1	0	↓	Measles	51	37	↓	Meningococcus	2	4	↑	cVDPV	22	32	↑	WPV	2	3	↑	Yellow Fever	4	1
VPD	2018-2020 annual avg.	2022	Trend																															
Cholera	1	5	↑																															
Ebola	1	0	↓																															
Measles	51	37	↓																															
Meningococcus	2	4	↑																															
cVDPV	22	32	↑																															
WPV	2	3	↑																															
Yellow Fever	4	1	↓																															
2 Promote equity	2.1 Number of zero-dose children	50% reduction in number of zero-dose children	<p>2030 target: 6.2 M 2019 (baseline): 12.9 M 2022: 14.3 M 1.4 M (10.9%) increase</p>																															
	2.2 Introduction of new or under-utilized vaccines in low- and middle-income countries	500 vaccine introductions by decade's end	<p>2030 target: 500 237 (cumulative) 47% of target</p> <p>Legend: COVID-19, 2020-2021 (blue); Routine, 2020-2021 (light blue); Routine, 2022 (dark blue)</p>																															
3 Build strong immunization programmes	3.1 Vaccination coverage across the life-course	90% coverage of full course for selected vaccines	<p>90% (2030 target)</p> <p>DTP3: 86% → 84% MCV2: 71% → 74% PCV3: 51% → 60% HPVc: 14% → 15%</p>																															
	3.2 UHC Service Coverage Index	Universal Health Coverage increase in all countries, regions and globally	<p>Global baseline: 68 2021 average: 68</p> <p>2021 change from baselines: Increase (1), No change (5), Decrease (68)</p>																															

*Indicators with figures in orange are “off-track” to meet 2030 targets and with figures in blue are “on-track”.

†Estimates exclude deaths averted due to COVID-19 vaccination.

Impact Goal 1.1: Number of future deaths averted through immunization

Take-home messages:

- An estimated 4.10 million future deaths were averted by vaccination against 14 key pathogens in 2022 (Figure 3).
- The number of deaths averted in 2022 was 9.3% lower than initially targeted. Because of the failure to reach targets in 2022, an estimated 422,000 additional future deaths from vaccine-preventable diseases will occur.
- The gap between estimated and target numbers is driven primarily by lower than anticipated vaccination coverage for human papillomavirus vaccine (HPV), measles, yellow fever and hepatitis B, and delays in introductions.
- The figures emphasize the need for further improvements in coverage and new introductions in order to achieve the target of 50 million total deaths averted by 2030.

According to initial disease modelling⁷, an estimated 50 million deaths will be averted due to vaccinations administered between 2021 and 2030 against 14 pathogens (not including COVID-19), if vaccination targets are met. The annual figure for deaths averted is based on 2022 vaccination coverage and introductions to date, as well as updated population estimates.

Modelling suggests that, for the 2022 birth cohort, the largest proportion of future deaths averted will derive from prevention of measles (39.5%), hepatitis B (28.9%) and pertussis (11.4%). The relative contribution of different vaccines to the numbers of deaths averted varies across regions (Figure 4).

Figures do not include deaths averted by COVID-19 vaccination. Future analysis will include a wider range of vaccine-preventable diseases.

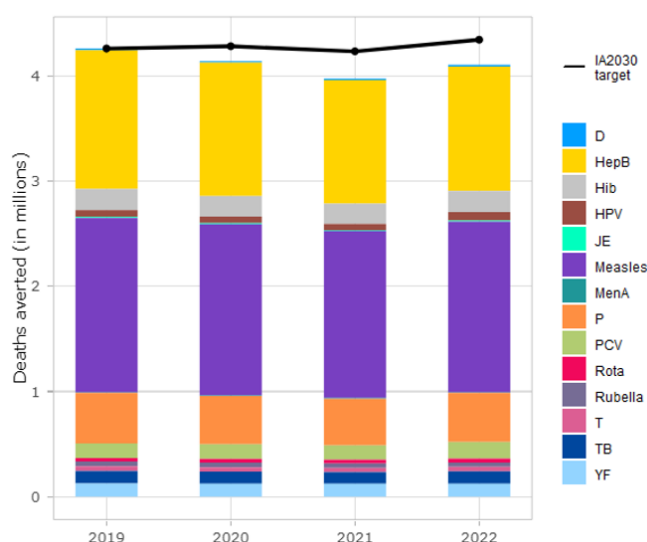


Figure 3: Estimated future deaths averted by vaccination against 14 pathogens in a given year. Numbers are derived from modelling based on actual coverage and IA2030 targets. D: Diphtheria; HepB: hepatitis B virus; Hib: Haemophilus influenzae type b; HPV: human papillomavirus; JE: Japanese encephalitis; MenA: Neisseria meningitidis serogroup A; P: pertussis; PCV: Streptococcus pneumoniae (pneumococcal conjugate vaccine); Rota: rotavirus; T: tetanus; TB: tuberculosis (BCG); YF: yellow fever.

⁷ Carter A, Msemburi W, Sim SY, Gaythorpe KAM, Lambach P, Lindstrand A, Hutubessy R. Modeling the impact of vaccination for the Immunization Agenda 2030: Deaths averted due to vaccination against 14 pathogens in 194 countries from 2021 to 2030. Vaccine. 2023;S0264-410X(23)00854-X. doi: 10.1016/j.vaccine.2023.07.033.

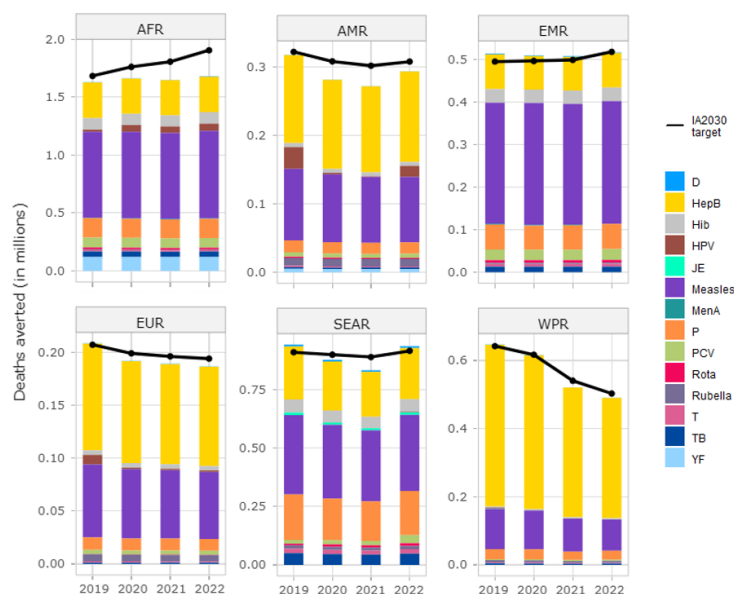


Figure 4: Estimated future deaths averted by vaccination against 14 pathogens in a given year broken down by WHO region. The global target is to avert approximately 50 million future deaths by 2030.

Impact Goal 1.2: Number and % of countries achieving endorsed regional or global VPD control, elimination and eradication targets (Figures 5, 6)

Take-home messages:

- **Wild poliovirus remains endemic in two countries.**
- **Measles elimination has been verified in 83 countries (43%), a slight improvement over previous reporting by Regional Verification Commissions.**
- **Two additional countries have been verified for rubella elimination, bringing the total number to 98.**
- **By the end of 2022, maternal and neonatal tetanus elimination had yet to be verified in 12 countries (no change from 2021).**
- **Overall, modest progress has been made towards global and regional eradication and elimination targets since 2019.**

Polio: Polio remains endemic in two countries (Afghanistan and Pakistan). In 2022, two cases of type 1 wild poliovirus were detected in Afghanistan and 20 in Pakistan (compared with four and one, respectively, in 2021). During 2023, endemic countries have continued to report cases of wild poliovirus in 2023 (five in Afghanistan and two in Pakistan by the end of July 2023).

Eight cases of type 1 wild poliovirus were reported in Mozambique in 2022, with the earliest case having an onset date in March, and the most recent case having an onset date in August. The cases are genetically similar to the 2021 wild poliovirus case in neighbouring Malawi, which was the first wild poliovirus case detected in Africa in over five years (and was itself genetically linked to an isolate from Pakistan). As there is no evidence of sustained transmission, detection of these isolated cases has not affected the region's eradication status.

The number of circulating vaccine-derived poliovirus (cVDPV) outbreaks (mostly type 1 and type 2; see page 18) remains high, with more than 30 countries affected across five of the six WHO regions, indicating widespread deficiencies in poliovirus vaccine coverage and therefore immunity.

Measles: At the country level, the evaluation of progress towards measles and/or rubella elimination is based on the most recent report submitted by the National Verification Committee (NVC) and evaluated by the Regional Verification Commission (RVC)⁸. In all, 83 countries (43%) have been verified for measles elimination, a slight increase since previous RVC reports.

Although all six WHO regions have a regionally endorsed elimination target, no region has yet reached its regional target. The Region of the Americas and the European Region are the closest to achieving regional measles elimination, with 33 countries (94%) and 35 countries (66%) having achieved elimination, respectively.

Rubella: Two regions (the African and Eastern Mediterranean Regions) have yet to establish a regionally endorsed rubella elimination target. In the four regions with an endorsed target, 78% of countries have achieved rubella elimination. In one region, the Region of the Americas, rubella has been successfully eliminated in all countries. Globally, 51% of countries have achieved rubella elimination. In 2022, two countries were newly verified as having achieved rubella elimination. Reporting periods are as for measles⁷.

Maternal and neonatal tetanus: As of the end of 2022, 12 countries had yet to eliminate maternal and neonatal tetanus (the same as in 2021). However, Mali was validated as having achieved elimination in July 2023. In addition, partial validation surveys are scheduled in 2023 for sub-national areas in Nigeria, Pakistan, Yemen and Guinea, while the whole of Guinea will be targeted for an elimination validation survey before the end of 2023. Post-validation assessment was conducted in Cameroon in 2022.

Hepatitis B: While 2022 data are not shown in the following graphics, regional control goals have been set by all six WHO regions. There is variation in the target prevalence and target date across the regions. Furthermore, there is regional variation in establishing processes to validate the goals. Five regions have active verification committees. Data on hepatitis B will be included in future Technical Progress Reports.

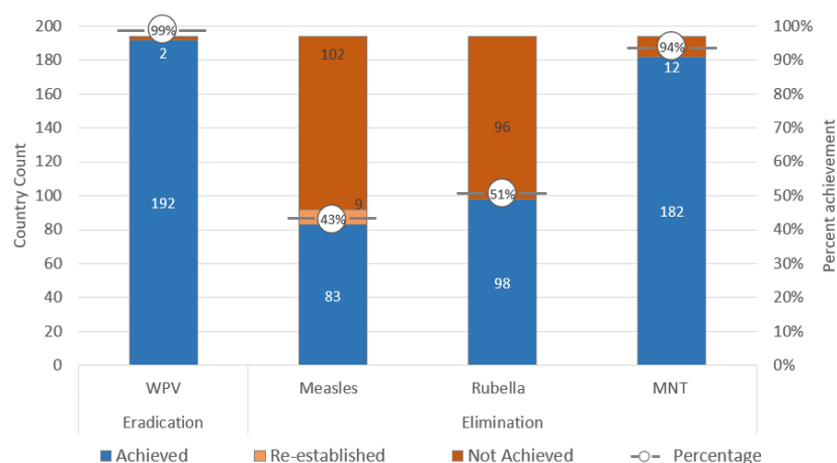


Figure 5. Status of eradication and elimination targets for wild poliovirus, measles, rubella, and maternal and neonatal tetanus in 2022, showing country counts and percentage of countries achieving target. For measles and rubella, information relates to 2021 data reviewed in 2022 (AMR, EMR, EUR, WPR) or 2022 data reviewed in 2023 (AFR, SEAR).

⁸ RVC meetings took place in 2022 (reviewing 2021 data) in four regions and in 2023 (reviewing 2022 data) in two regions. The figures summarized here reflect the situation after these 2022 and 2023 meetings.

WHO Region:	Eradication	Elimination		
	WPV	Measles	Rubella	MNT
AFR	47 (100%)	0 (0%)	0 (0%)	41 (87%)
AMR	35 (100%)	33 (94%)	35 (100%)	35 (100%)
EMR	19 (90%)	4 (19%)	4 (19%)	16 (76%)
EUR	53 (100%)	35 (66%)	50 (94%)	53 (100%)
SEAR	11 (100%)	5 (45%)	4 (36%)	11 (100%)
WPR	27 (100%)	6 (22%)	5 (19%)	26 (96%)

Regional target status
Achieved
Not achieved
Pending endorsement

Figure 6. Count and percentage of countries by WHO region that have achieved eradication or elimination of selected vaccine-preventable diseases in 2022. For measles and rubella, information relates to 2021 data reviewed in 2022 (AMR, EMR, EUR, WPR) or 2022 data reviewed in 2023 (AFR, SEAR).

Impact Goal 1.3: Number of large or disruptive VPD outbreaks (Figures 7, 8)

Take-home messages:

- An increased number of large or disruptive measles, cholera and meningococcal disease outbreaks⁹ were seen in 2022 compared with 2021.
- For wild polioviruses, Ebola, circulating vaccine-derived polioviruses (cVDPVs) and yellow fever, the numbers of large or disruptive outbreaks showed no change or were lower in 2022 than in 2021.
- The increases since 2021 in large, disruptive measles outbreaks reflects inadequate routine immunization coverage and delayed and low-coverage supplementary campaigns, which have left substantial immunity gaps, leaving populations vulnerable and at risk.
- For meningococcal disease, introduction of affordable vaccines that cover a greater number of serogroups causing disease could have a substantial impact on cases and outbreak numbers.

Based on data reported to WHO, the number of large or disruptive outbreaks increased in 2022 compared to 2021 for measles, cholera and meningococcal disease, remained stable for wild polioviruses and Ebola, and showed a slight decline for cVDPVs (type 1 and type 2) and a marked decline for yellow fever.

⁹ The definition of “large and disruptive” differs by disease. See the IA2030 Framework for Action for details.

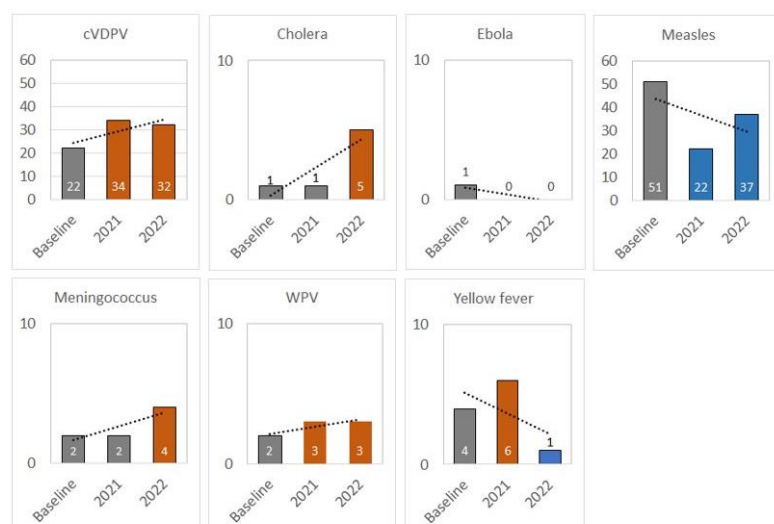


Figure 7: Global comparison of the number of large or disruptive outbreaks between baseline (2018–2020) and in 2021 and 2022 for reported vaccine-preventable diseases. Orange bars indicate progress is off-track to meet 2030 targets; blue bars indicate progress is on-track.

The numbers of large or disruptive measles outbreaks rose significantly in 2022. Although numbers remain lower than in 2018–2020 baseline period, this was a period with an alarmingly high number of outbreaks.

As in 2021, the distribution of large or disruptive outbreaks across WHO regions varies by disease:

- Large or disruptive **measles outbreaks** primarily affected the African and Eastern Mediterranean Regions, with the African Region experiencing 28 such outbreaks in 2022 (18 during the baseline period) and the Eastern Mediterranean Region having six such outbreaks in both 2022 and the baseline period. By contrast, the European and Western Pacific Regions have had markedly fewer such outbreaks since the baseline period.

These patterns indicate that multiple countries, primarily in the African and Eastern Mediterranean Regions, are facing challenges in immunizing high proportions of individuals. This is due to weak immunization and primary healthcare systems and barriers to implementing high-quality campaigns to fill the consequent immunity gaps, including global funding policy that has favoured achieving high campaign coverage over timeliness. Measles can be used as a “tracer” of immunization system performance, with outbreaks indicative of system weaknesses at all levels and resulting in significant inequity.

- The African, Americas and Eastern Mediterranean Regions were all affected by large or disruptive **cholera outbreaks** in 2022, including countries that had not been affected by cholera for years. The reasons for the increase compared to 2021 and baseline are multifactorial. Contributory factors include the lifting of COVID-19 control measures and reinforcement of surveillance systems following the acute phase of the pandemic, which increased outbreak detection, notification and response capacity. In addition, extreme weather events exacerbated by climate change contributed to the increase in large or disruptive cholera outbreaks, part of a larger surge in cholera outbreaks that affected even more countries.

Interventions such as oral cholera vaccine (OCV), used in conjunction with water, sanitation and hygiene interventions, helped to prevent some cholera outbreaks from becoming large or disruptive,

although vaccine supply constraints limited the overall impact of OCV, particularly its preventive deployment outside outbreak contexts. The 2022 experience underlined the importance of strengthening cholera control efforts and ensuring that adequate supplies for the detection and prevention of cholera are readily accessible to countries.

- Large or disruptive **meningococcal disease outbreaks** continued to be concentrated in the African meningitis belt. No cases of meningococcal A disease have been detected in the meningitis belt since 2017 due to widespread use of meningococcal A conjugate vaccine. However, outbreaks caused by other meningococcal serogroups continue to occur. As multivalent meningococcal vaccines are available for outbreak response in the African meningitis belt and elsewhere, all meningococcal outbreaks regardless of serogroup continue to be measured by this indicator.

Large or disruptive outbreaks caused by other meningococcal serogroups may soon be averted through use of a new, affordable pentavalent meningococcal conjugate vaccine that was prequalified in 2023. WHO recommendations on use of this vaccine in the African meningitis belt are expected in September 2023.

- **Wild poliovirus** continued to affect two endemic countries in the Eastern Mediterranean Region and affected one country in the African Region in 2021 and a neighbouring country in 2022. These were the first wild poliovirus cases detected in the region since 2016.

cVDPV outbreaks (types 1 and 2) affected every region in 2022 except the Western Pacific Region, with the African Region particularly affected. The majority of cases were recorded in eastern parts of the Democratic Republic of the Congo, northern Nigeria and northern Yemen, all of which present significant accessibility and security challenges. The data underscore the continuing importance of closing the gaps in population immunity that facilitate the spread of paralytic poliomyelitis, including in challenging geographies. High coverage with IPV, the only vaccine used in routine immunization that is protective against type 2 poliovirus, is critical to preventing the cases of paralysis that accompany the spread of type 2 poliovirus.

- As in 2021, all 2022 outbreaks caused by **Zaire ebolavirus**, for which WHO-prequalified vaccines are available, were contained before having enough cases to be considered large and disruptive, thanks in large part to prompt detection and comprehensive, multifaceted responses. Although a large and disruptive outbreak of *Sudan ebolavirus* occurred in Uganda in 2022 and was ultimately contained, it does not count towards the IA2030 total because there is not currently a prequalified vaccine for prevention of Sudan Ebola virus disease.
- The only large or disruptive **yellow fever** outbreak in 2022 occurred in the African Region. Increasing population immunity, particularly due to the implementation of the Eliminating Yellow Fever Epidemics (EYE) strategy and associated preventive yellow fever routine immunization and campaigns in Africa and the Americas, has helped to reduce the risk of such large or disruptive outbreaks, even as sporadic cases and small outbreaks have continued to appear.

The 2022 experience illustrates the importance of capitalizing on the multiple opportunities to prevent large or disruptive outbreaks, including by reducing the number of people at risk for an outbreak through strengthening routine immunization and timely campaign strategies, as well as effective outbreak detection and response to contain outbreaks before they become large or disruptive. Vaccination is critical for

preventing all of these diseases, but it is even more effective when combined with other interventions such as timely and accurate surveillance and monitoring.

WHO region:	Cholera	Ebola	Measles	Mening.	Polio, cVDPV	Polio, WPV	YF
AFR	2 ●	0 ● ⁹⁹	28 ●	4 ●	22 ●	1 ●	1 ● ⁹⁹
AMR	1 ●	0 ●	0 ● ⁹⁹	0 ●	2 ●	0 ●	0 ● ⁹⁹
EMR	2 ●	0 ●	6 ●	0 ●	5 ●	2 ●	0 ●
EUR	0 ●	0 ●	1 ● ⁹⁹	0 ●	2 ●	0 ●	0 ●
SEAR	0 ●	0 ●	2 ●	0 ●	1 ●	0 ●	0 ●
WPR	0 ●	0 ●	0 ● ⁹⁹	0 ●	0 ● ⁹⁹	0 ●	0 ●
Global	5 ●	0 ●	37 ●	4 ●	32 ●	3 ●	1 ●

Trend directionality: negative ●, neutral ●, positive ●

Figure 8: Number of large or disruptive outbreaks by region in 2022 and direction of multiyear trend.

Impact Goal 2.1: Number of zero-dose children

Take-home messages:

- The global number of zero-dose children (children under one year of age not receiving DTP1) was 14.3 million in 2022, 3.8 million fewer than the 18.1 million in 2021 but still higher than the 12.9 million in baseline year 2019 (Figure 9).
- All WHO regions except the African Region saw decreases in 2022 in the number of zero-dose children compared to 2021.
- Catch-up efforts are urgently needed to protect children missing out on vaccination. Greater efforts are required to deliver immunization and other essential services to zero-dose and other under-immunized populations, based on an understanding of the root causes of under-immunization in different settings.

Zero-dose children often belong to households that suffer from multiple deprivations (poverty, lack of access to clean water, poor sanitation, food insecurity) and experience barriers to services based on gender. They are missed not only by routine immunization but often also by supplementary campaigns. Delivering immunization and other essential healthcare services to such populations must therefore be a high priority.

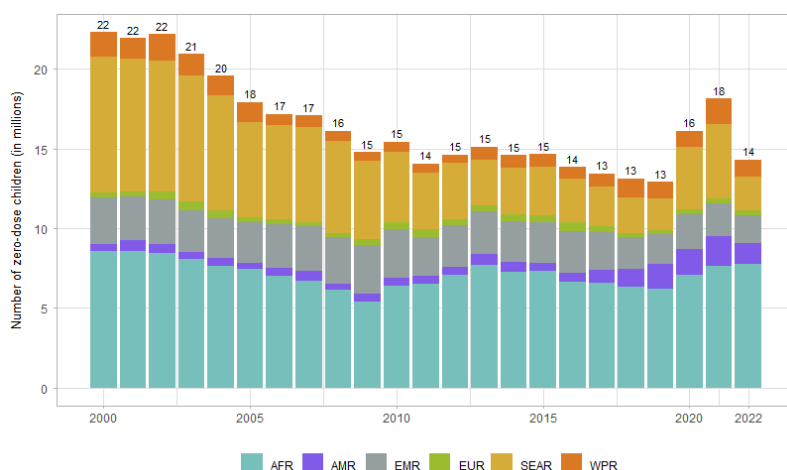


Figure 9: Trends in the numbers of zero-dose children (in millions) by WHO region.

Rank	Country	2021		Rank	Country	2022	
		DTP1 coverage (%)	Number of zero-dose children			DTP1 coverage (%)	Number of zero-dose children
1	India	88	2,711,000	1	Nigeria	70	2,271,000
2	Nigeria	70	2,247,000	2	Ethiopia	70	1,146,000
3	Indonesia	74	1,150,000	3	India	95	1,126,000
4	Ethiopia	70	1,134,000	4	DR Congo	81	753,000
5	Philippines	57	1,048,000	5	Philippines	74	637,000
6	DR Congo	81	734,000	6	Angola	53	614,000
7	Brazil	74	710,000	7	Indonesia	87	571,000
8	Pakistan	90	611,000	8	Brazil	84	431,000
9	Angola	57	553,000	9	Pakistan	93	431,000
10	Myanmar	45	492,000	10	Mozambique	67	377,000
11	Tanzania	83	380,000	11	Somalia	52	346,000
12	Mozambique	67	372,000	12	Afghanistan	77	321,000
13	Afghanistan	74	361,000	13	Madagascar	66	299,000
14	Somalia	52	338,000	14	Cameroon	75	231,000
15	Mexico	83	317,000	15	Tanzania	91	205,000
16	Madagascar	66	295,000	16	DPR Korea	40	202,000
17	Cameroon	76	219,000	17	Chad	74	189,000
18	DPR Korea	42	197,000	18	Guinea	62	170,000
19	Chad	73	191,000	19	Myanmar	81	168,000
20	Viet Nam	87	187,000	20	Mali	82	161,000
	Total		14.2 million		Total		10.6 million

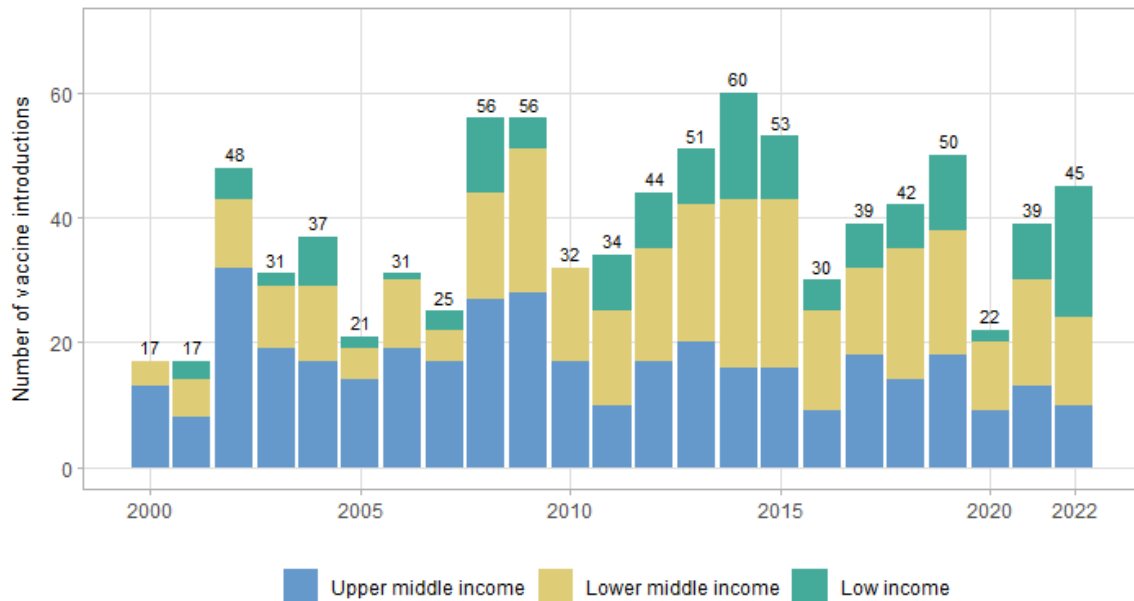
Figure 10: Countries ranked according to absolute number of zero-dose children, 2021 versus 2022, and corresponding DTP1 coverage.

Impact Goal 2.2: Introduction of new or under-utilized vaccines in low- and middle-income countries

Take-home messages:

- Excluding COVID-19 vaccines, new vaccine introductions in low- and middle-income countries increased in 2022 compared to 2020 and 2021 (2020: 22; 2021: 39; 2022: 45), mainly due to introductions in low-income countries (Figure 11).
- The highest numbers of new introductions in 2022 were second dose of inactivated polio vaccine (IPV2), HPV vaccine and MCV2 (Figure 12).
- Compared to 2021, increased numbers of HPV vaccine and MCV2 introductions were seen in 2022.
- The new introductions will help to reduce the impact of key diseases such as measles and prevent more cases of cervical cancer. However, there is a continuous need to accelerate introductions,

particularly for WHO universally recommended vaccines: DTP-containing vaccine booster dose, HPV vaccine, IPV2, MCV2, PCV, rotavirus vaccine and rubella-containing vaccine.



Includes DTP booster, Hep A, Hep B birth dose, Hib, HPV, Influenza, IPV2, Japanese encephalitis, MCV2, Men A, Multivalent Meningococcus, Mumps, PCV, Rotavirus, Rubella, Varicella, and Yellow fever vaccines

Cook Islands and Niue are excluded as they are not classified by World Bank
Venezuela is temporarily unclassified by World Bank, but considered as Upper middle income based on 2019 classification

Figure 11: Number of vaccine introductions in low- and middle-income countries 2000–2022 (excluding COVID-19 introductions, which numbered four in 2020 and 127 in 2021).

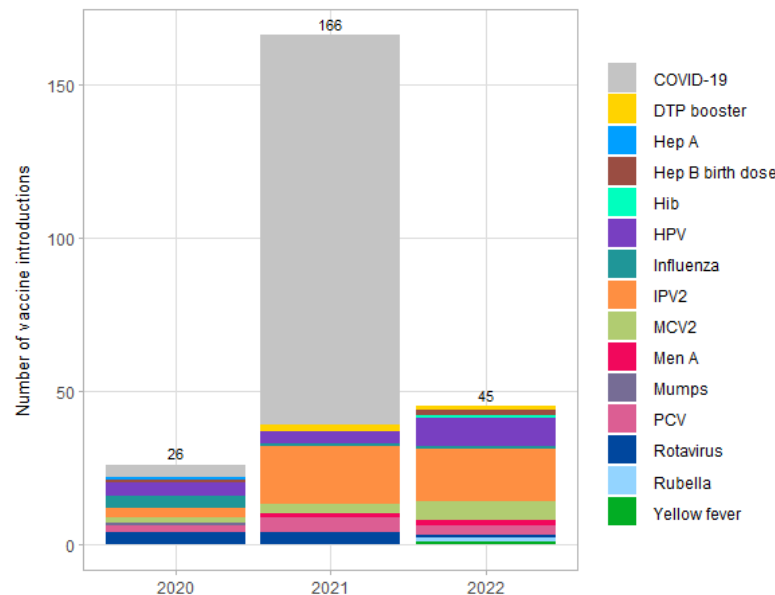


Figure 12: Number of vaccine introductions in 2020, 2021 and 2022 in low- and middle-income countries, by vaccine type.

Impact Goal 3.1: Vaccination coverage across the life course: DTP3, MCV2, PCV3, HPVc

Take-home messages:

- Global coverage of all four indicator vaccines increased in 2022 compared to 2021. Increases for PCV, MCV2 and HPVc are partially due to new introductions between 2019 and 2022.
- Although the African Region continued to experience a drop in DTP3 coverage (5% point drop since 2019), DTP3 coverage in all other WHO regions has now nearly returned to baseline 2019 levels (Figure 13).
- In all countries except low-income and non-Gavi lower-middle income countries, DTP3 coverage in 2022 is now close to 2019 levels (Figure 14).
- Progress with HPV vaccination remains uneven across regions, with coverage highest in the Region of the Americas (52%) and lowest in the Eastern Mediterranean Region (0.2%) – highlighting the urgent need to expand both introductions and coverage in countries using the vaccine.

The biggest increases in vaccination coverage were seen for MCV2 and PCV3, although these gains vary by region (Figure 13) and by country income group (Figure 14). During the pandemic, low- and middle-income countries experienced a larger setback than high-income countries, suggesting that their programmes were not as resilient to shocks. Coverage in 2022 showed some recovery, but recovery is least evident in low-income and non-Gavi lower middle-income countries.

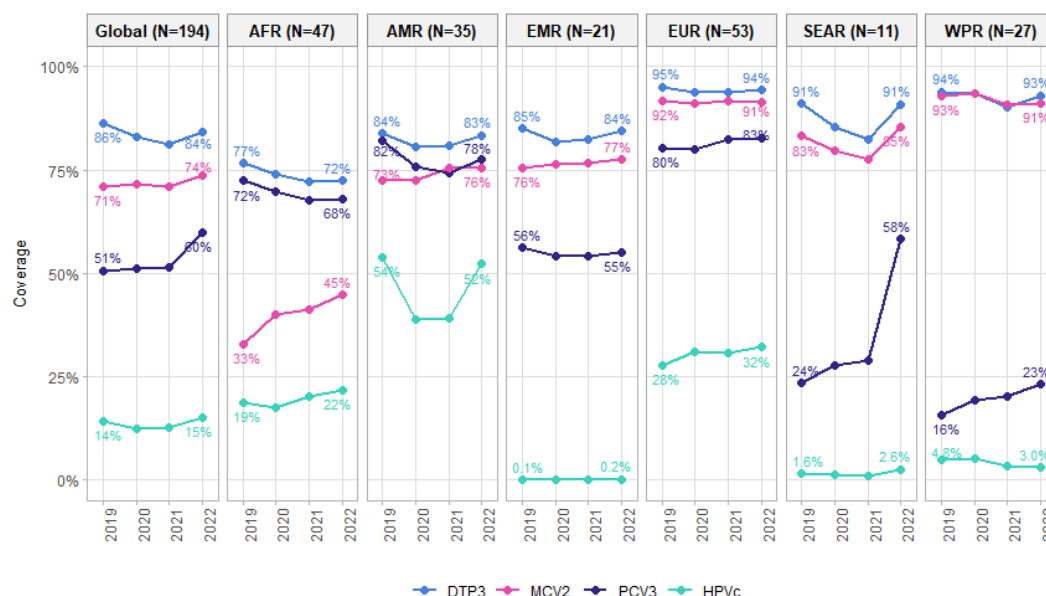
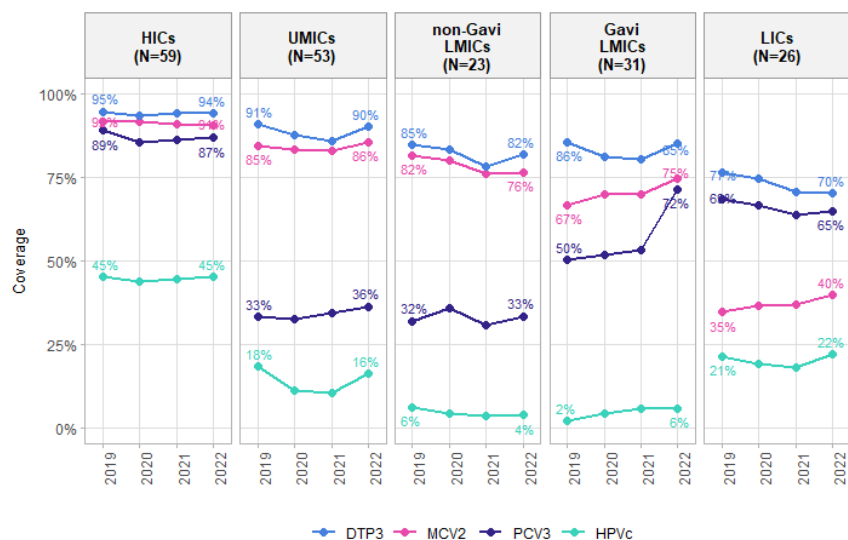


Figure 13: DTP3, MCV2, PCV3 and HPVc coverage by WHO region. The HPVc denominator is the global population of 15-year-old females.



57 Gavi supported countries
 Cook Islands and Niue are excluded as they are not classified by World Bank
 Venezuela is temporarily unclassified by World Bank, but reported as Upper middle income based on 2019 classification

Figure 14: DTP3, MCV2, PCV3 and HPVc coverage in countries categorized by World Bank income level and Gavi status.

Impact Goal 3.2: UHC Service Coverage Index

Take-home messages:

- The population-weighted global universal health coverage (UHC) Service Coverage Index (SCI) score increased from 45 to 68 out of 100 between 2000 and 2021 (Figure 14).
- However, recent progress in coverage has slowed compared to pre-2015 gains, rising only three index points between 2015 and 2021.
- Although the proportion of the population not covered by essential health services decreased by about 15% between 2000 and 2021, minimal progress was made after 2015. In 2021, about 4.5 billion people (approximately 14–87% of the population at the country level) were not fully covered by essential health services.

Significant advances toward universal health coverage by 2030 require accelerating the expansion of all essential health services, especially those where minimal progress has been made, such as coverage for non-communicable diseases. Worryingly, the world has moved in the wrong direction, with a slowdown in the expansion of service coverage observed since 2015 and worsening or no significant improvements in service coverage in most countries since 2019.

Regional variations in the UHC SCI persisted through 2021 (Figure 15). The population-weighted regional index scores were highest in the WHO European Region (81) and Region of the Americas (80), followed by the Western Pacific (79), South-East Asian (62), Eastern Mediterranean (57) and African (44) Regions.

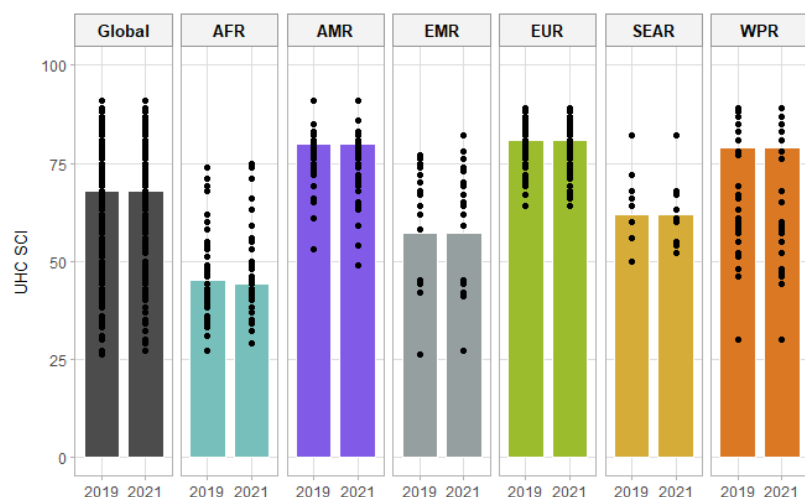


Figure 15: Comparison of the UHC Service Coverage Index for global and regional population-weighted estimates in baseline year 2019 and 2021 (the latest year for which data are available).

In 2000, 68 countries had low or very low levels of service coverage (SCI <40), compared to 14 countries in 2021 (Figure 16). Conversely, in 2000, only one country had very high service coverage levels (SCI 80+), which improved substantially to 42 countries by 2021.

Immunization uptake is a key measurement of progress on the path to UHC. The proportion of one-year-old children vaccinated with three doses of diphtheria, tetanus toxoid and pertussis vaccine (DTP3) is an essential health service and a tracer indicator in the reproductive, maternal, newborn and child health component of the SCI. While increasing and sustained levels of immunization among children have contributed to improved rates of childhood survival and well-being over the past three decades, unfortunately, in recent years, this trend has not continued. As a critical component of tracking UHC, reversing the trend in immunization coverage is necessary to accelerate progress towards UHC by 2030.

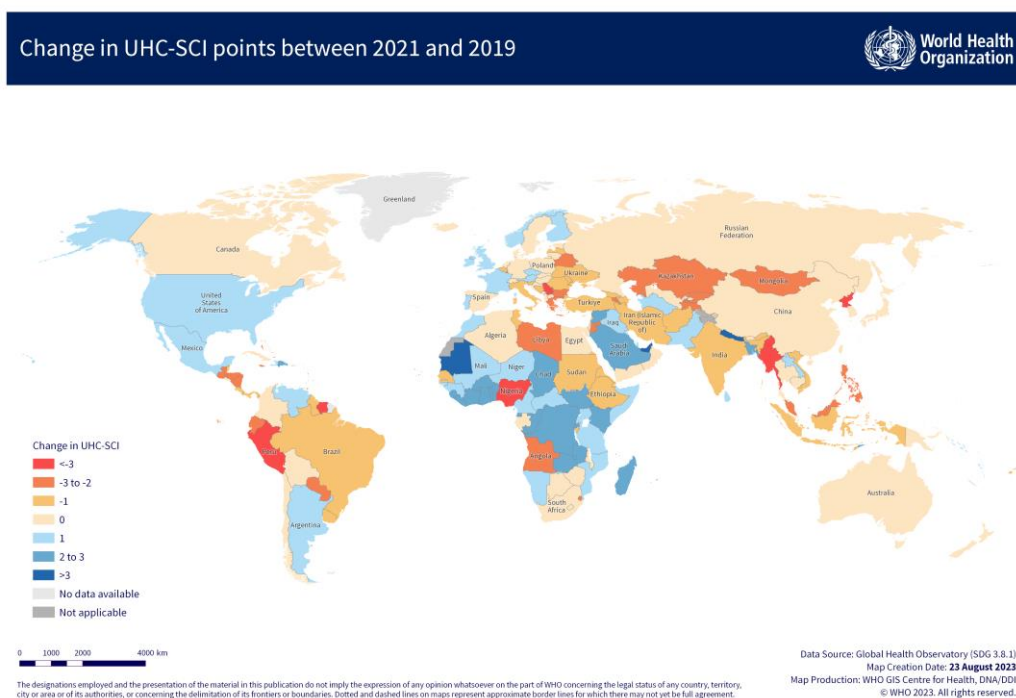


Figure 16: National-level change in UHC Service Coverage Index points between baseline year 2019 and 2021.

In line with these improvements, since 2000, all country-level SCI scores have converged, or become more equal, as countries with lower scores in the earlier years made more relative progress on expanding service coverage than countries with higher scores at the beginning of the period. Given the overall trends, this indicates that countries with the lower scores have made progress towards catching up to their peers with higher scores. However, after 2015, this trend towards more global equality in service coverage came to an abrupt halt in all regions except the WHO African and South-East Asia Regions.

The degree to which the COVID-19 pandemic has affected health service coverage globally remains unclear. However, decreases in service coverage during the pandemic have been observed at both sub-regional and country levels.

D2. Exploring country trends

An exploratory set of data visualizations has been developed to examine trends at regional and country level.

DTP1: 2022 versus 2019

This analysis (Figure 17) illustrates the extent to which countries in each region have **returned to baseline DTP1 coverage levels** – any country to the right of the diagonal line has exceeded their baseline coverage.



Figure 17: DTP1 coverage in 2022 versus 2019, by WHO region. Bubble size represents size of surviving 2022 birth cohort in individual countries.

MCV1: 2022 versus 2019

This analysis (Figure 18) illustrates the extent to which countries in each region have **returned to baseline (2019) MCV1 coverage levels** – any country to the right of the diagonal line has exceeded their baseline coverage. (It should be noted that 2019 coverage levels were far below the levels needed for effective measles prevention, and a return to baseline is only a step towards global goals.)

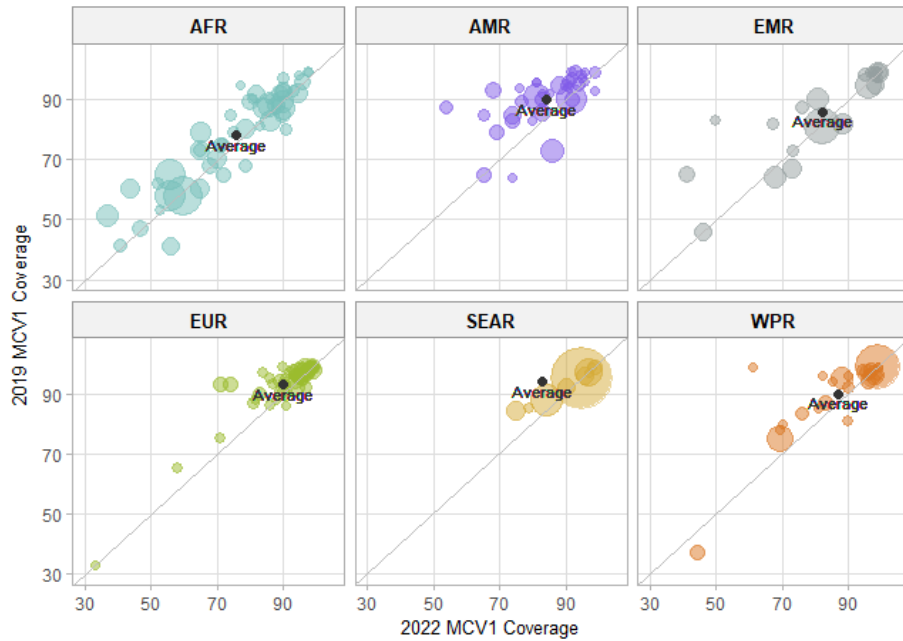


Figure 18: MCV1 coverage in 2022 versus 2019, by WHO region (excluding People’s Democratic Republic of Korea). Bubble size represents size of surviving 2022 birth cohort in individual countries.

MCV1 versus DTP1 in 2022

This analysis (Figure 19) illustrates the relationship between **DTP1 and MCV1**, a proxy for **dropouts**. For any country to the right of the diagonal line, MCV1 coverage is lower than DTP1 coverage. Coverage is relatively equal in the South-East Asia region (with one exception, the Democratic People’s Republic of Korea) and the Region of the Americas. The European and Western Pacific Regions have several outliers where MCV1 is comparatively low. Multiple countries fall into this bracket in the African and Eastern Mediterranean Regions.

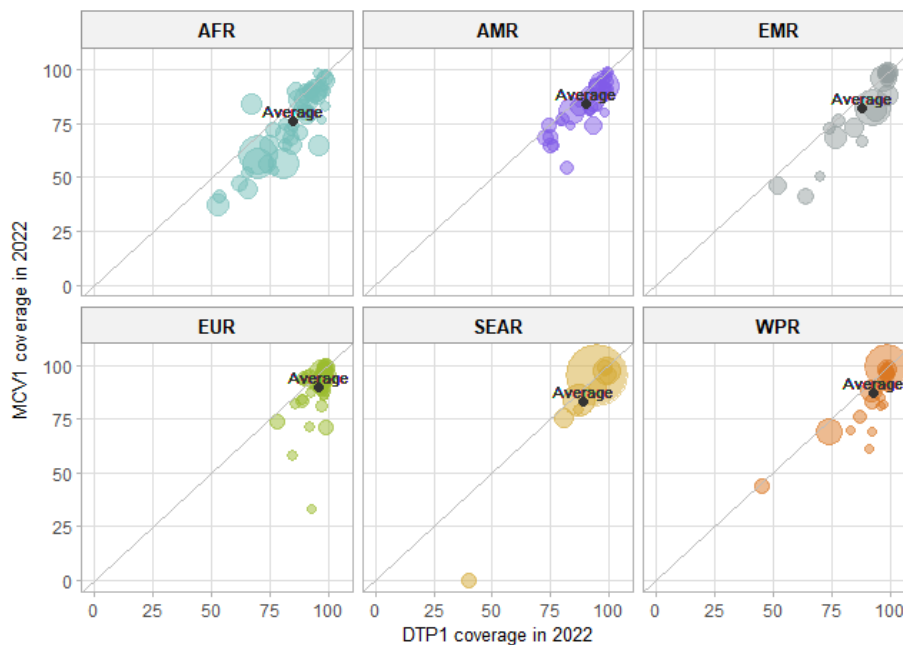


Figure 19A: MCV1 versus DTP1 coverage in 2022, by WHO region. Bubble size represents size of surviving 2022 birth cohort in individual countries.

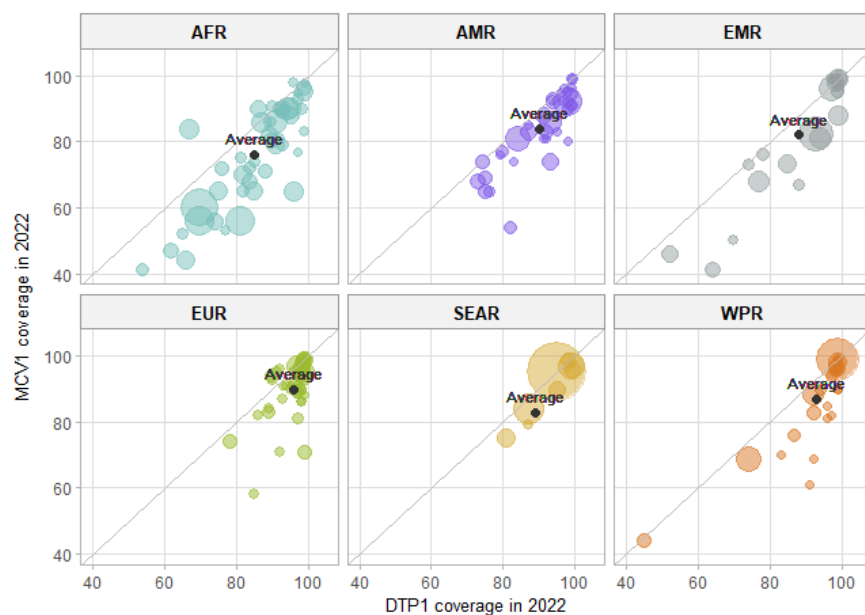


Figure 19B: MCV1 versus DTP1 coverage in 2022, by WHO region, excluding very low coverage countries (SEAR: People's Democratic Republic of Korea; EUR: Montenegro; AFR: Angola). Bubble size represents size of surviving 2022 birth cohort in individual countries.

D3. COVID-19 vaccination

Take-home messages:

- Modelling suggests that approximately 20 million deaths were prevented by COVID-19 vaccination in the first year following the introduction of vaccination¹⁰.
- More than 5 billion people have received a primary series of COVID-19 vaccination.
- Major regional disparities persist in COVID-19 vaccine coverage.

By the end of July 2023, there had been 769,000,000 reported cases of COVID-19 (although this is likely to be significant under-estimate of the actual number of cases) and 7.0 million deaths have been reported to WHO. A total of 13.5 billion vaccine doses had been administered (Figure 20).

In all, 5.6 billion people have received at least one dose of COVID-19 vaccine and 5.1 billion people have received a primary series.

¹⁰ Watson OJ, Barnsley G, Toor J, Hogan AB, Winskill P, Ghani AC. Global impact of the first year of COVID-19 vaccination: a mathematical modelling study. *Lancet Infect Dis.* 2022;22(9):1293-1302. doi: 10.1016/S1473-3099(22)00320-6.

Total coronavirus (COVID-19) vaccine doses administered per 100 population 

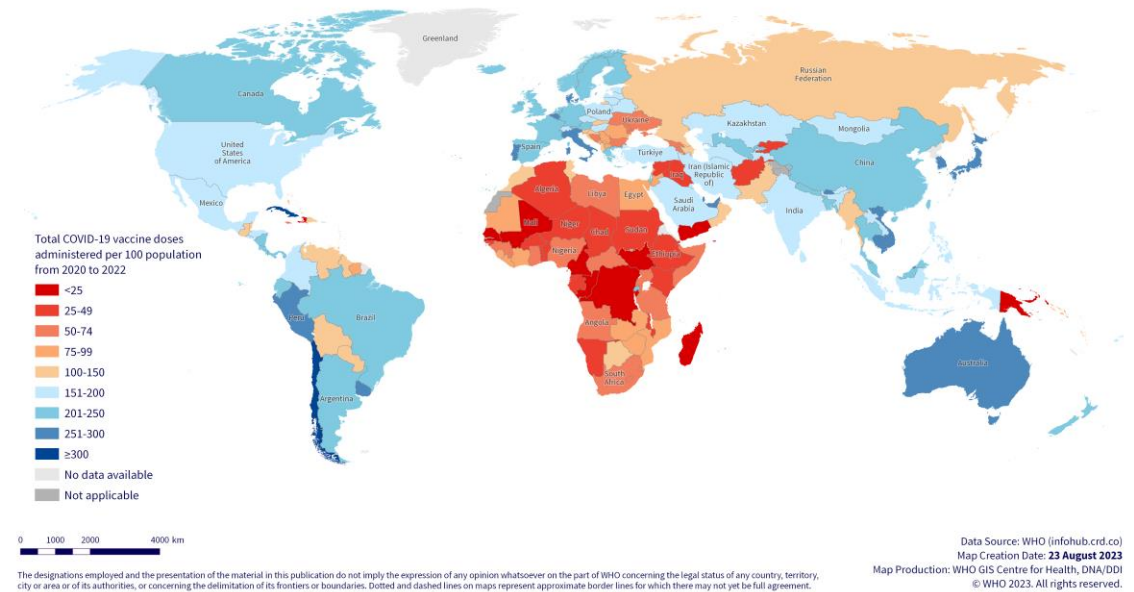


Figure 20. Vaccine doses administered per 100 population through December 2022.

COVID-19 vaccination coverage rates continue to vary markedly by country income level, with the doses administered per 100 people exceeding 200 in high- and upper middle-income countries, almost reaching 150 in lower middle-income countries, but yet to reach 50 in low-income countries (Figure 21).

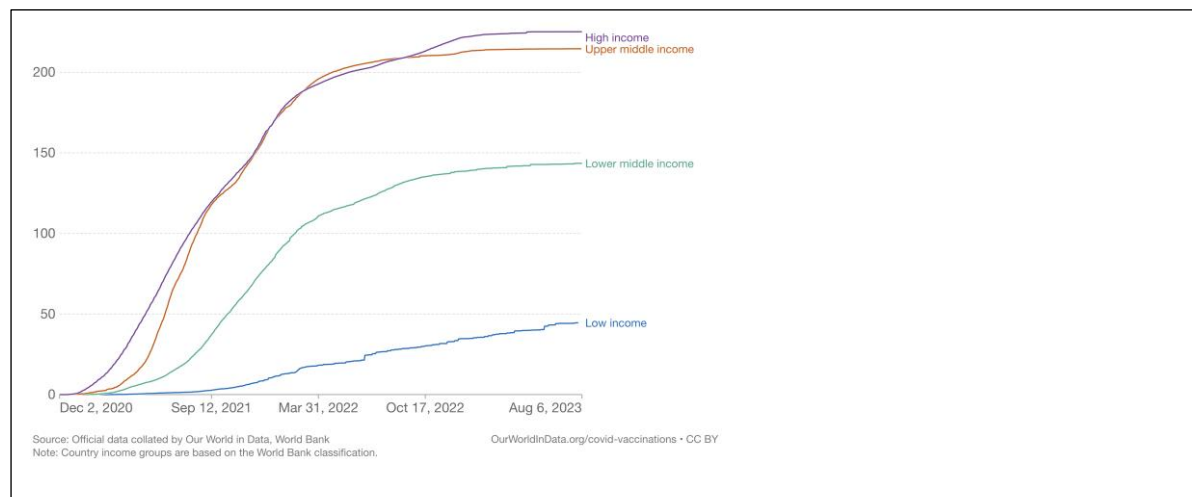


Figure 21. Population coverage of COVID-19 vaccination by country income level.

D4. Strategic priority indicators

The **15 global strategic priority objectives indicators** (Table 2) are designed to track performance at all levels (country, regional and global), to help identify potential root causes of success and failure in relation to IA2030 impact goals, so that actions for improvement can be recommended. No global targets are provided for these indicators, due to wide regional and country variations. Regions and countries are encouraged to assess the baseline for each indicator and to set targets for these indicators, based on guidance provided in Annex 1 to the IA2030 Framework for Action.

Table 2: Strategic Priority (SP) indicators, baseline and 2022 data*

Strategic Priority	Indicator	2022 data <i>Unless otherwise noted, 2021 is indicator baseline</i>
	1.1 Proportion of countries with evidence of adopted mechanism for monitoring, evaluation and action at national and subnational levels	Data forthcoming in 2023
	1.2 Density of physicians, nurses and midwives per 10,000 population†	53.7 health workers per 10,000 population‡ (Physicians: 16.9; nurses/midwives: 36.9) <i>2019 baseline: 56.4 (17.4 physicians and 39 nurses/midwives)</i>
	1.3 Proportion of countries with on-time reporting from 90% of districts for suspected cases of all priority VPDs included in nationwide surveillance†	38% (9 out of 24 pilot countries reported ≥90% timely reporting from ≥90% of districts or other administrative levels)
	1.4 Proportion of time with full availability of DTP and MCV at service delivery level†	35% (67 out of 194 countries) §
	1.6 Proportion of countries with at least one documented (with reporting form and/or line-listed) individual serious adverse event following immunization (AEFI) case safety report per million total population	47% (92 out of 194 countries) <i>2019 baseline: 28% (54 out of 194)</i>
2 Commitment & Demand	2.1 Proportion of countries with legislation in place that is supportive of immunization as a public good†	59% (115 out of 194 countries)
	2.2 Proportion of countries that have implemented behavioural or social strategies (i.e., demand generation strategies) to address under-vaccination†	45% (87 out of 194 countries)
3 Coverage & Equity	3.2 DTP3, MCV1, and MCV2 coverage in the 20% of districts with lowest coverage (mean across countries)	69% DTP3, 66% MCV1, 57% MCV2 <i>2019 baseline: 74% DTP3, 72% MCV1, 64% MCV2</i>
4 Life Course & Integration	4.1 Breadth of protection (mean coverage for all WHO-recommended vaccine antigens)	72% <i>2019 baseline: 71%</i>
5 Outbreaks & Emergencies	5.1 Proportion of polio, measles, meningococcus, yellow fever, cholera, and Ebola outbreaks with timely detection and response	18% (7 out of 40 outbreaks; excluding polio) <i>average 2018-2020 baseline: 25%</i>
6 Supply & Sustainability	6.1 Health of vaccine markets, disaggregated by vaccine antigens and country typology	Data forthcoming in 2023
	6.2 Proportion of countries whose domestic government and donor expenditure on primary health care increased or remained stable	83% (20 out of 24 countries, 2019 to 2020) <i>2018-2019 baseline: 75% (18 out of 24)</i>
	6.3 Proportion of low- and middle-income countries whose share of national immunization schedule vaccine expenditure funded by domestic government resources increased or remained stable¶	61% (34 out of 56 countries, 2021 to 2022) <i>2018-2019 baseline: 68% (38 out of 56)</i>
7 Research & Innovation	7.1 Proportion of countries with an immunization research agenda†	13% (26 out of 194 countries)
	7.2 Progress towards global research and development targets	Data forthcoming in 2024

* Table only includes SP objectives for which global indicators have been specified. Indicators highlighted in blue denote a positive change from baseline and indicators in orange indicate a negative change from baseline.

† Indicators based on new eJRF questions piloted in 2021. Data have limitations due to novelty of the indicators and ability of countries to report on them. Questions will be revised in light of lessons learned during piloting.

‡ 2020 data used because 2022 data are not yet available.

§ Reported at the district level; further discussions will be held to refine the indicator.

¶ Estimate excludes domestic expenditure on COVID-19 vaccination.

• SP 1.1 Leadership, Management, Coordination

Indicator: Proportion of countries with evidence of adopted mechanism for monitoring, evaluation and action at national and subnational levels

Take-home messages:

- **Data for this new indicator will be available later in 2023.**
- **Although the number of countries with National Immunization Technical Advisory Groups (NITAGs) increased to 170 in 2022, the number categorized as functional fell from 122 in 2021 to 112 in 2022 (Figure 22).**
- **Functional NITAG numbers fell in all regions except the African, Eastern Mediterranean and South-East Asia Regions.**
- **Only a third of NITAGs in the WHO Western Pacific Region meet the functionality criteria, compared with more than 80% in the South-East Asia Region (Figure 22).**

NITAGs play a key role as independent expert bodies providing evidence-based advice to national immunization programmes. They are supported in their work by Regional Immunization Technical Advisory Groups (RITAGs). The past decade has seen remarkable progress in the number of NITAGs globally, which have increased from 92 in 2010 to 170 in 2022; 66% of them are classified as “functional” (meeting six process criteria relating to NITAG functionality).

Since 2021, two new indicators have been added to better measure NITAG outputs and impact. NITAGs issued at least one recommendation in 2022 in more than three-quarters of countries, and at least one of the recommendations was adopted by the ministry of health in a similar number of countries (Figure 23). However, adoption of at least one recommendation varied from 85% in the Region of the Americas to 56% in the Western Pacific Region.

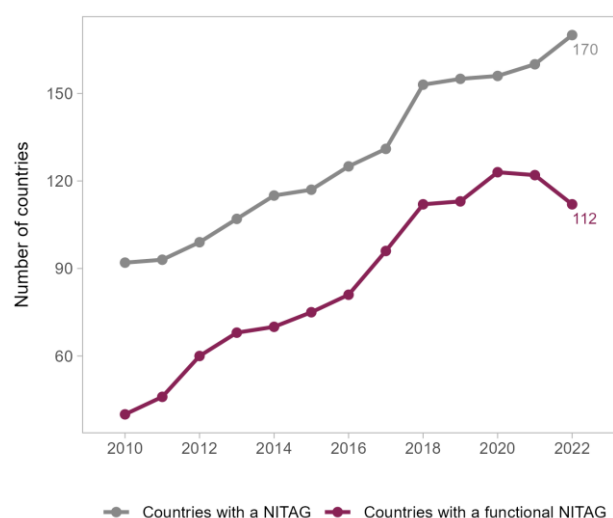


Figure 22: Number of countries with NITAGs and functional NITAGs (achieving six process indicators relating to NITAG functionality).

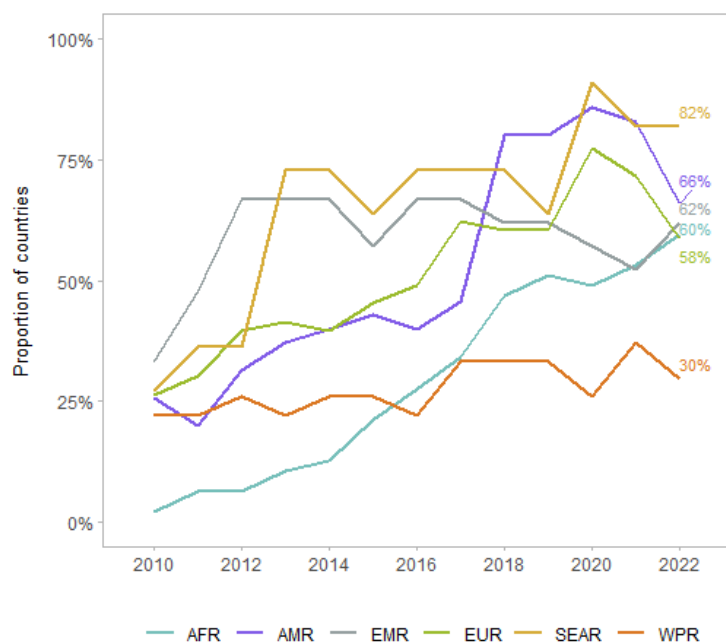


Figure 23: Proportion of countries with a functional NITAG or equivalent in each WHO region.

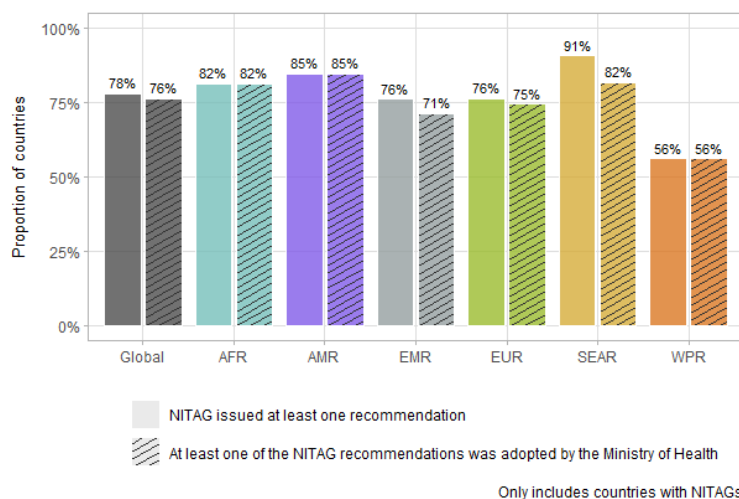


Figure 24: Proportion of countries with NITAGs that have issued at least one recommendation and at least one of the recommendations was adopted by a ministry of health, 2022.

SP 1.2 Health Workforce

Indicator: Density of physicians, nurses and midwives per 10,000 population

Take-home messages:

- The latest data available are from 2021; no new data are available for 2022.
- As discussed in last year’s Technical Progress Report, health workforce shortages are most acute in the Africa, Eastern Mediterranean and South-East Asia Regions (Figure 25).

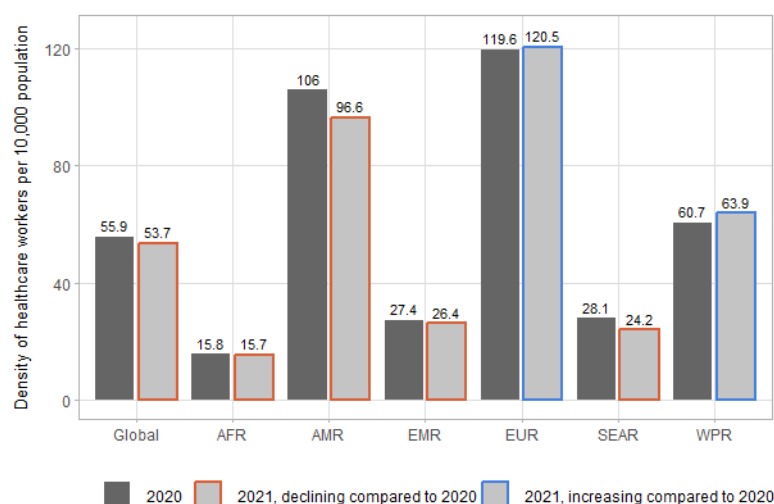


Figure 25. Density of health workers per 10,000 total population.

SP 1.3 Comprehensive VPD Surveillance

Indicator: Proportion of countries with on-time reporting from 90% of districts for suspected cases of all priority VPDs included in nationwide surveillance

Take-home messages:

- **As a continuation of the pilot test in 2021, this indicator was piloted in 31 countries in 2022. Countries from all six WHO regions participated in 2021; in 2022 countries from all regions except the European Region participated.**
- **Most of the piloting countries were able to respond to the questions related to completeness and timeliness of surveillance reporting. In 2022, 80% (24 out of 30) of the pilot countries that submitted the eJRF could respond to these questions (range: 50–100% across WHO regions). In 2021, 91% (42 out of 46) of the countries responded (range: 60–100% across WHO regions).**
- **Of the 24 countries that responded in 2022, 42% had received complete and 38% had received on-time reporting from at least 90% of their specified administrative level (Figure 26).**
- **The pilot data-capture exercise has shown that:**
 - **Most countries are able to provide data on surveillance reporting.**
 - **There are gaps in quality of completeness and timeliness of surveillance reporting, pointing to the need for strengthening of surveillance systems.**
 - **The indicator can discriminate between country performance on surveillance reporting.**
 - **Reporting by all countries during the next eJRF cycle will increase awareness of this indicator and help countries focus on this core component of surveillance system and immunization programme performance.**

Vaccine-preventable disease (VPD) surveillance is a core component of a functioning immunization programme. Timely identification, investigation, confirmation and reporting, including timely reporting of non-occurrence of cases (“nil reporting”), are core disease surveillance functions. Timeliness of VPD surveillance reporting is thus an indicator of surveillance system and immunization system performance.

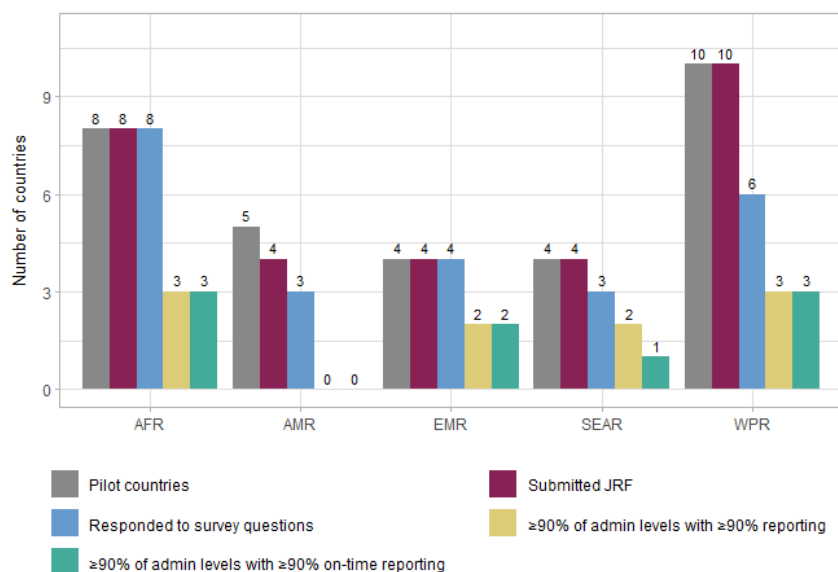


Figure 26: Number of 2022 pilot countries with complete and timely reporting of surveillance data.

Of the 24 responding countries in 2022, 10 countries (42%) had at least 90% of the respective administrative levels reporting for suspected cases of all priority VPDs included in nationwide surveillance (completeness), with values ranging from 0% to 67% (median: 50%) across WHO regions. Nine countries (38%) had on-time reporting from at least 90% of administrative levels, ranging from 0% to 50% between WHO regions (median: 38%).

The pilot for two consecutive years 2021 and 2022 clearly demonstrated that most countries (87% or 66 out of 76 over two years) could report on this data for VPD surveillance, even as they were battling the COVID-19 pandemic.

This IA2030 indicator used at the global level as a pilot for two years has been able to identify some shortcomings in VPD surveillance systems in selected countries. During the pandemic, it is likely that VPD surveillance activities were disrupted in many countries by redeployment of surveillance officers and laboratory staff to COVID-19 responses. Monitoring of this indicator and triangulation with other data sources such as acute flaccid paralysis (AFP) reporting, and measles/rubella surveillance data, will likely enable WHO regions and countries to identify and address issues in performance of VPD surveillance systems.

SP 1.4 Supply Chain

Indicator: Proportion of service delivery points with full availability of DTP and MCV

Take-home messages:

- Due to challenges in obtaining comprehensive data at the service delivery level, data are currently being reported at the district level.
- In most regions, data on district-level stockouts generally show a decreasing trend over the recent years, with a slight increase in 2022 compared to 2021 (Figure 27).
- 122 out of 194 (63%) countries reported having a system in place to measure vaccine availability at the service delivery level (Figure 28).

To effectively assess this indicator, countries need to have a functional system to monitor and report vaccine supply availability at the service delivery level during each resupply cycle. Further discussions will be held to refine the indicator and ensure it is understood by countries.

This indicator is currently being reported at the district level. Historical data around the proportion of countries reporting district-level stockouts for any vaccine is available (Figure 27). Reasons for the increased numbers of stockouts in 2022 include delays in the release of government funds, delays in vaccine distribution to the district level, and inadequate forecasting of vaccine needs.

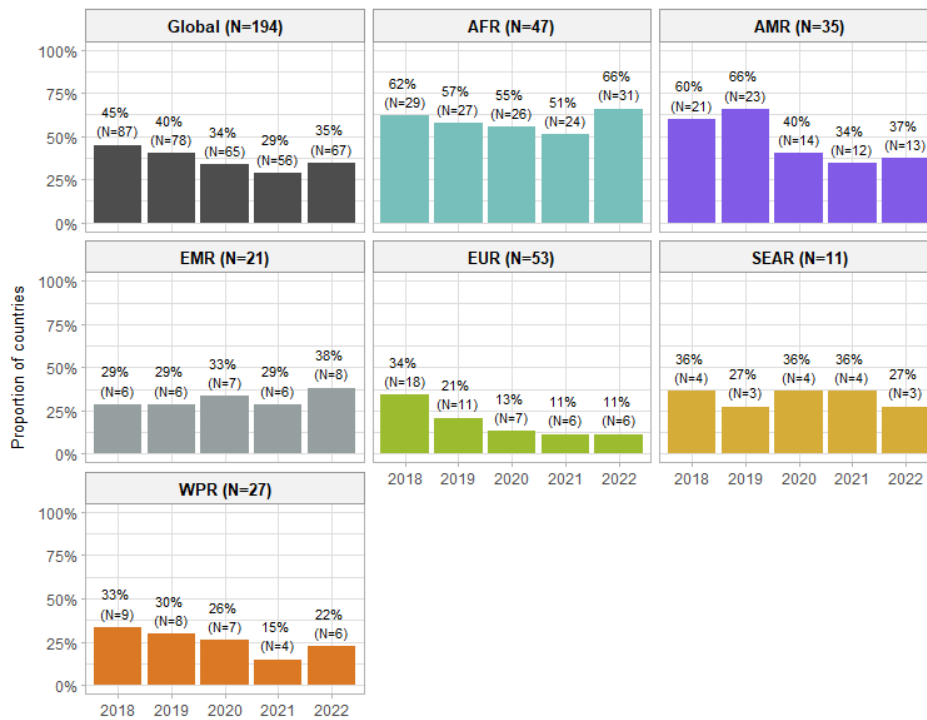


Figure 27: Proportion of countries reporting district-level stockouts.

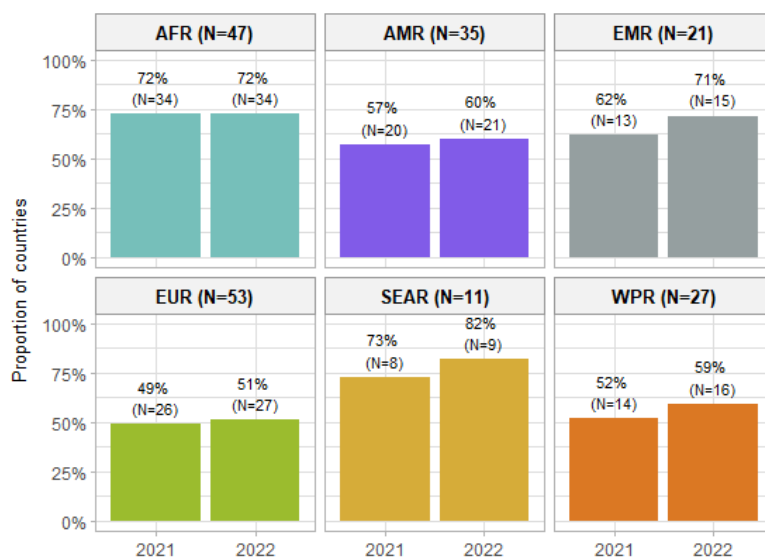


Figure 28: Proportion of countries with system in place to measure vaccine availability at the service delivery level, 2021–2022.

Apart from the WHO Region of the Americas, the slight increase in the proportion of countries reporting district-level stockouts in 2022 compared to 2021 may be due to the increased uptake of vaccination through catch-up activities with wider age cohorts in some countries. The increase may also be due to countries having better visibility of the stock situation at the district level through strengthened supply chain information systems introduced with COVAX support. In some cases, reduced availability of financing may have delayed vaccine purchases, leading to stockouts.

SP 1.6 Vaccine Safety

Indicator: Proportion of countries with at least one documented individual serious adverse event following immunization (AEFI) case safety report per million total population.

Take-home messages:

- **Globally, 92 out of 194 countries (47%) reported at least one serious AEFI case into VigiBase in 2022 (Figure 29, 30).**
- **Across all WHO regions, the proportion of countries that reported at least one serious AEFI case into VigiBase in 2022 decreased compared to 2021.**
- **As most AEFI cases in 2021 were associated with COVID-19 vaccines, it is evident that AEFI surveillance systems in countries have the capacity to share “case-based” data globally.**
- **However, with the reduction in COVID-19 vaccines being administered and focus shifting to routine immunization, additional efforts will be needed to enable countries to continue reporting at least one serious AEFI case per million population.**

Sharing of AEFI data between stakeholders within a country is critical to ensure that safety signals are identified on time and appropriate responses are initiated. Prior to 2020, reporting of AEFI was based on sharing aggregate data (the total number of AEFI), which provided information on the “minimum functional capacity” of a country’s AEFI surveillance system. Most countries have achieved this minimum functional capacity for AEFI reporting for their routine immunization activities, particularly following strengthening of AEFI systems for COVID-19.

However, aggregate data do not provide details that are critical for programme managers and policymakers (such as the details of the different vaccines administered, nature of adverse events, age, gender, location, pregnancy status and other parameters). Hence, the next step will be to enhance vigilance systems to collect such “case-based data” to permit identification of signals and trends that can trigger further investigation.

In December 2020, WHO’s Global Advisory Committee on Vaccine Safety (GACVS) recommended adopting a new indicator of “at least one documented individual serious AEFI reported by a country (in a reporting form and/or linelist) per million total population in VigiBase, the WHO global database of ICSRs”. Except for the European Region, major efforts will be needed to help countries transition to case-based data sharing. GACVS advised that the previous indicator, of reporting aggregated data, should continue until all countries are able to transition to the new indicator.

The sharing of individual case-safety reports (ICSRs) rather than aggregate information at all levels – sub-nationally, nationally and globally – will enable countries to analyse AEFIs. This will provide information for

action, leading to better AEFI surveillance, signal detection, risk identification and risk minimization. Furthermore, when pooled into a global database, ICSRs can provide valuable insights into trends and regional characteristics of rare but significant AEFIs that may be difficult to detect through national aggregate data. The WHO Program for International Drug Monitoring (WHO PIDM) provides a platform and a global database, VigiBase, for countries, regions and territories to share ICSRs.

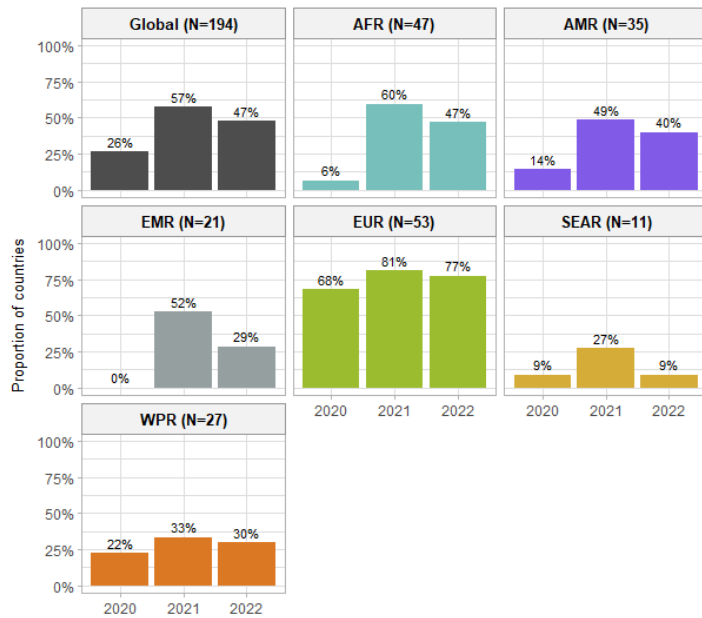


Figure 29: Proportion of countries reporting at least one serious AEFI cases into VigiBase.

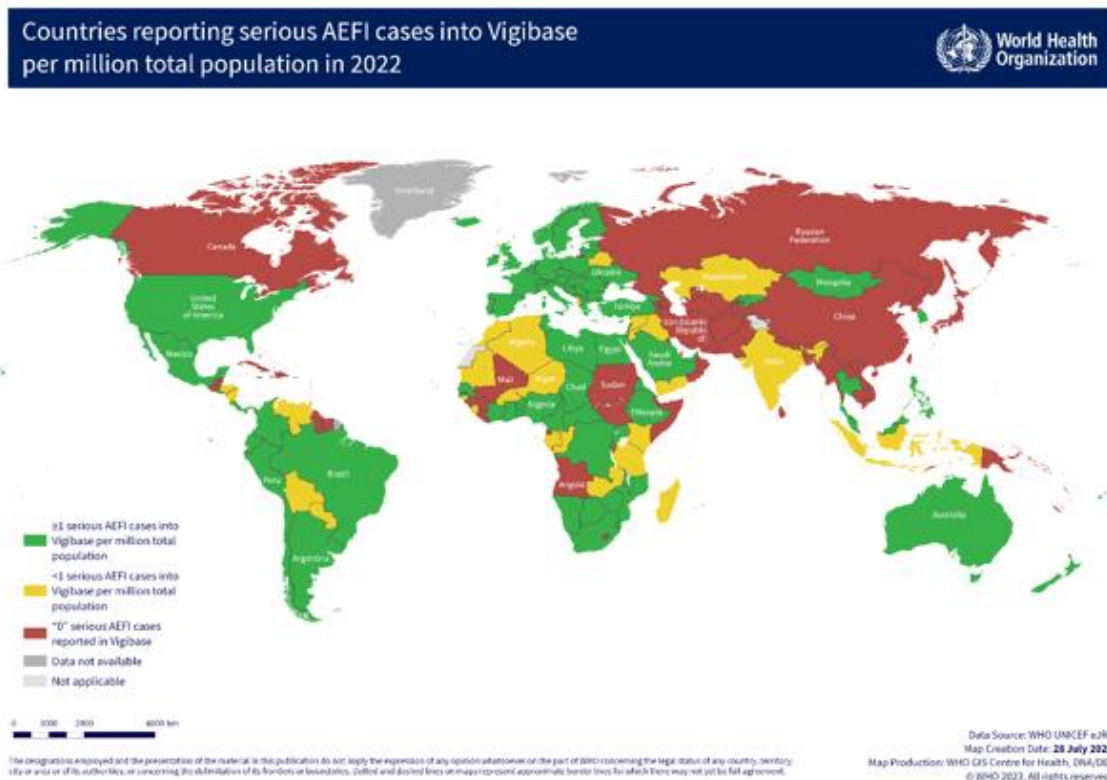


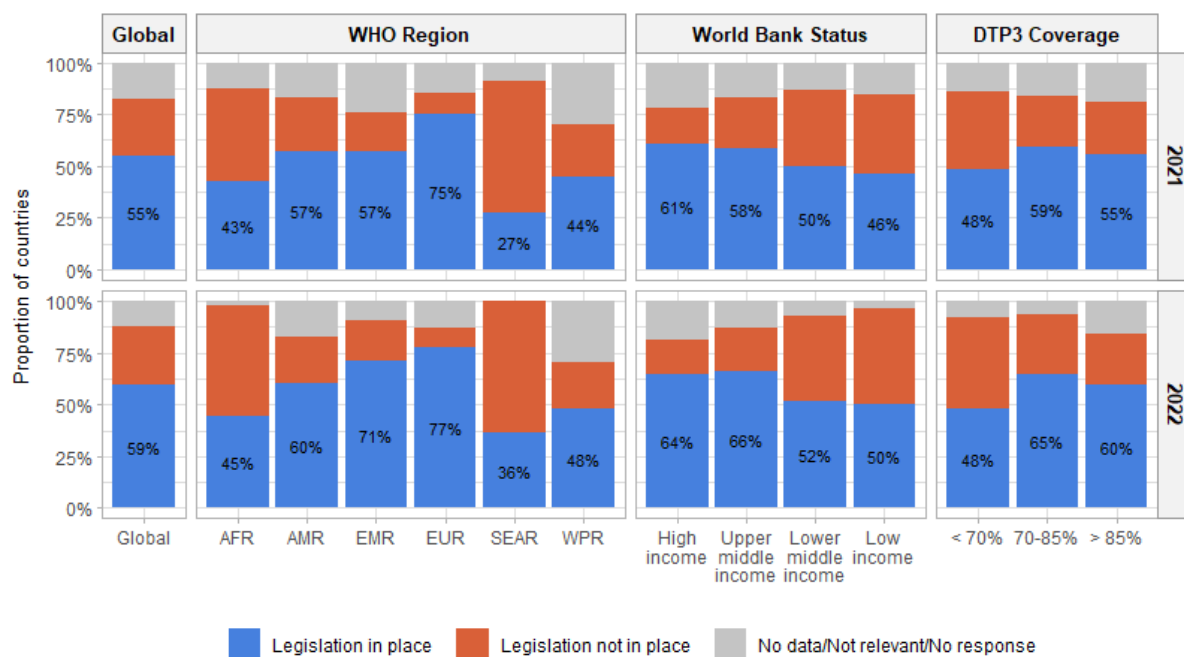
Figure 30: Number of serious AEFI cases per million total population reported into VigiBase in 2022.

SP 2.1 Commitment

Indicator: Proportion of countries with legislation in place that is supportive of immunization as a public good

Take-home messages:

- In 2022, 115 countries (59%) reported having legislation in place that is supportive of immunization as a public good, compared with 107 countries (55%) in 2021 (Figure 31).
- Findings varied across WHO regions, with the highest proportion in the European Region, followed by the Eastern Mediterranean Region, and the lowest proportion in the South-East Asian Region for both years.
- When data are broken down by World Bank income classification or by DTP3 coverage, low- and lower-middle income countries, and those countries with lower coverage (<70% DTP3) are less likely to report existence of legislation supportive of immunization as a public good.
- The data point to a continuing need to promote further strengthening of political commitment to immunization.



Cook Islands and Niue are excluded in the World Bank Status breakdown as they are not classified. Venezuela is temporarily unclassified by World Bank, but reported as Upper middle income based on 2019 classification.

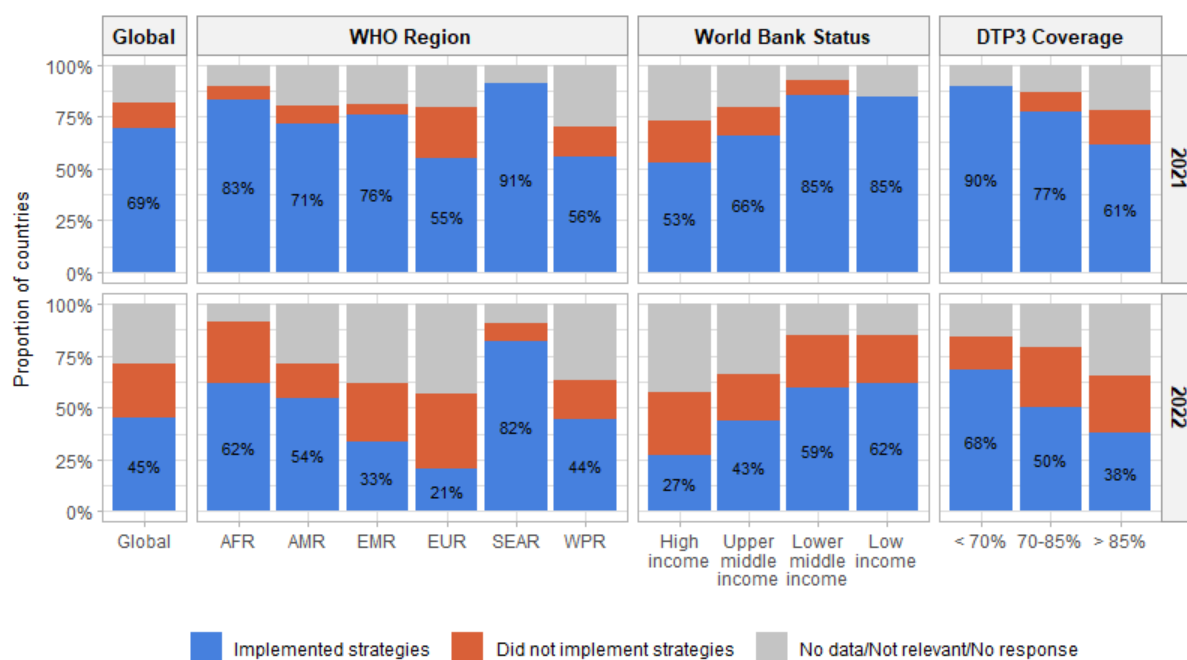
Figure 31: Proportion of countries reporting that legislation is in place which is supportive of immunization as a public good.

SP 2.2 Demand

Indicator: Proportion of countries that have implemented behavioural or social strategies (i.e. demand-generation strategies) to address under-vaccination

Take-home messages:

- In 2022, 87 countries (45%) reported having implemented behavioural or social strategies to address under-vaccination, compared with 134 countries (69%) in 2021 (Figure 32).
- However, this difference most likely reflects a revision to the eJRF question, as a phrase was added to specify implementation of strategies “informed by results of demand-related assessments”.
- Findings varied across WHO regions, with the highest proportion being seen in the South-East Asian Region and the lowest proportion in the European Region for both years.
- In 2022, implementation of behavioural or social strategies was reported by 62% of low-income countries and 59% of lower middle-income countries, but only 27% of high-income countries and 44% of upper middle-income countries.
- Countries with lower DTP3 coverage were more likely to have implemented behavioural or social strategies.
- Opportunities exist to promote greater use of behavioural or social strategies by countries; efforts are also needed to assess the effectiveness of these strategies.



Cook Islands and Niue are excluded in the World Bank Status breakdown as they are not classified
 Venezuela is temporarily unclassified by World Bank, but reported as Upper middle income based on 2019 classification

Figure 32: Proportion of countries reporting having implemented behavioural or social strategies.

Behavioural or social strategies reported in 2022 encompass community engagement (41% of countries), digital or social listening (39%), behaviourally informed interventions (32%), public communications (43%), service quality interventions (37%), and interventions to build capacity among healthcare workers (41%). A comprehensive range of strategies are required to achieve high uptake, to be informed by meaningful

engagement with civil society and community representatives, as well as local data on behavioural and social drivers.

In addition, 29% of countries reported having carried out an assessment of reasons for under-vaccination in 2022, and 59% of those countries included measures of behavioural and social drivers in the assessment.

SP 3.2 Equity

Indicator: DTP3, MCV1 and MCV2 coverage in the 20% of districts with lowest coverage (mean across countries)

Take-home messages:

- In 2022, the gap in coverage between the lowest-performing quintile of districts and national averages remained large.
- For DTP3, MCV1 and MCV2, coverage in the 20% highest-performing districts surpassed 2019 baseline levels in 2022, while coverage in the 20% lowest-performing districts remained significantly lower than at baseline (Figure 33).
- For DTP3, the difference in average coverage between the 20% lowest-performing districts and highest-performing districts was 33% in 2019 and 40% in 2022.
- The data suggest that limited, if any, progress has been made in closing vaccine coverage equity gaps since 2019.

This indicator aims to assess disparities in coverage within countries, by comparing coverage at the district level for three key vaccines in the 20% of districts with the lowest coverage and the national average. A small difference in coverage between the lowest quintile and the national average represents more equitable vaccination.

Although inconsistencies in data reporting over time in some countries introduce some challenges to data interpretation, there is little evidence that equity gaps in countries are closing, and they may be growing. No increase in coverage was seen in 2022 in the lowest quintile of districts for any of the three vaccines. This suggests that increased coverage seen in 2022 has not been achieved by improving access among the least well-served populations.

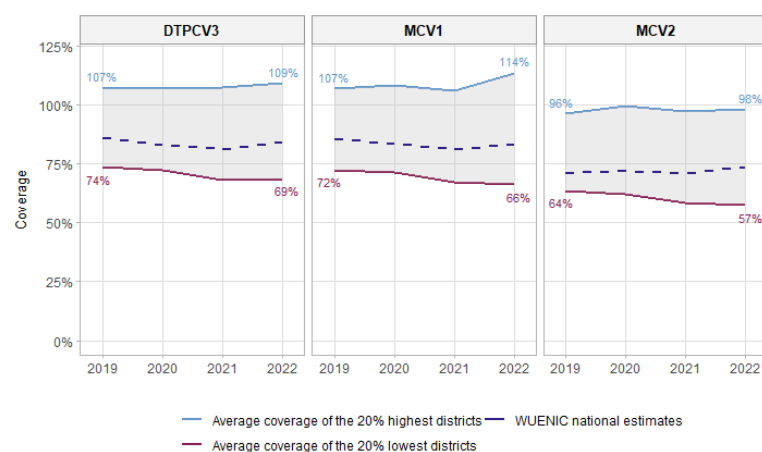


Figure 33: Average DTP3, MCV1 and MCV2 district-level coverage for lowest and highest district quintiles and national WUENIC estimates.

Regionally, limited progress was seen in increasing DTP3, MCV1 and MCV2 coverage in lowest-performing districts, except in the South-East Asia Region (for all three vaccines), the Region of the Americas (for DTP3 and MCV2) and the Eastern Mediterranean Region (for DTP3) (Figure 34).

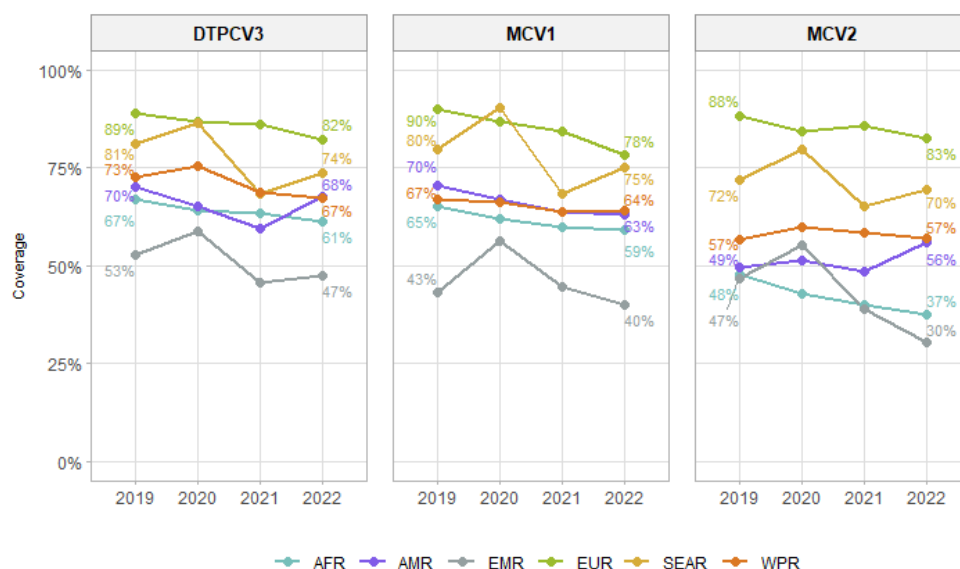


Figure 34: Average DTP3, MCV1 and MCV2 coverage in the 20% lowest-performing districts, by WHO region.

SP 4.1 Life-course – Breadth of Protection

Indicator: Mean coverage for all WHO-recommended vaccine antigens

Take-home messages:

- After the global decline in immunization coverage in 2020 and 2021, mean breadth-of-protection coverage in 2022 exceeded 2019 baseline levels (2022: 72%; 2019: 71%).
- To maintain this trajectory, there is a continued need to revitalize immunization programmes, strengthen delivery platforms across the life course, and to push forward with delayed vaccine introductions.

Breadth of protection is a cross-sectional programme performance indicator, defined as the average global coverage achieved for a set of globally recommended antigens used at different ages. After reaching a peak in 2019, global mean coverage declined globally in 2020 and 2021. Although the declines in 2020 and 2021 were relatively small, they followed many years of rising coverage predominantly resulting from the introduction of new vaccines. In 2022, coverage of these vaccines returned to or surpassed 2019 levels (Figure 35, 36), with a particularly marked increase seen in the South-East Asia Region.

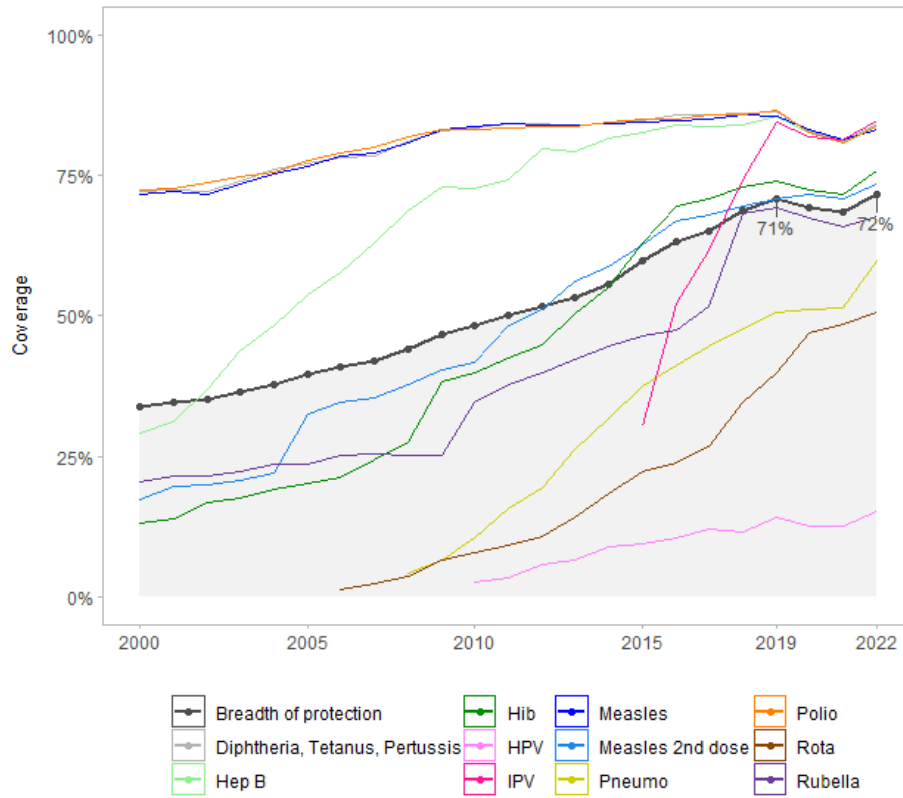


Figure 35: Trends in coverage for breadth-of-protection indicators 2000–2022.

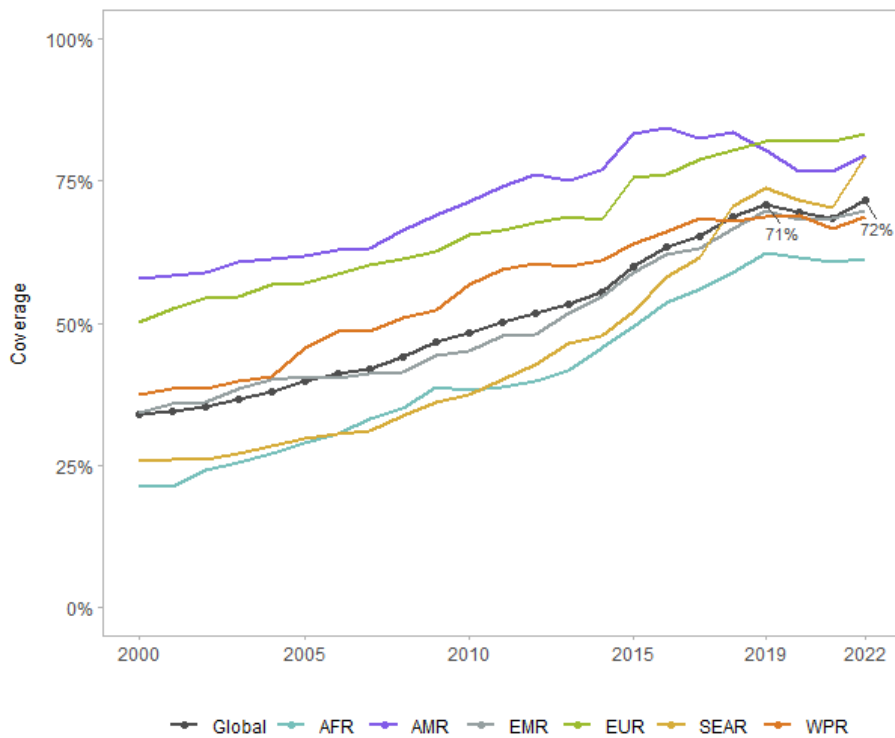


Figure 36: Trends in breadth-of-protection average coverage 2000–2022 by WHO region.

SP 5.1 International outbreak responses

Indicator: Proportion of polio, measles, meningococcus, yellow fever, cholera and Ebola outbreaks with timely detection and response

Take-home messages:

- The number of vaccine-preventable disease outbreaks generating an international response rose to 40 in 2022 compared to 29 in 2021.
- This increase was largely due to additional measles and cholera outbreaks.
- The proportion of international responses meeting timeliness criteria fell from 28% to 18%.
- With the number of outbreaks increasing, and with some being detected in areas that have rarely if ever been affected in the past, there is an urgent need to strengthen national and international responses.

There were 40 vaccine-preventable disease outbreaks in 2022 where the resulting vaccination campaigns received vaccines, funding or other support from international organizations, an increase from 29 such outbreaks in 2021 and higher than the baseline (2018–2020 average) of 25 such outbreaks¹¹. This increase was driven by cholera, for which 18 outbreaks triggered internationally supported outbreak response vaccination campaigns (alongside water, sanitation and hygiene interventions), and measles, for which 10 such outbreaks occurred (Figure 37). The scale of cholera responses was also limited by oral cholera vaccine supply constraints.

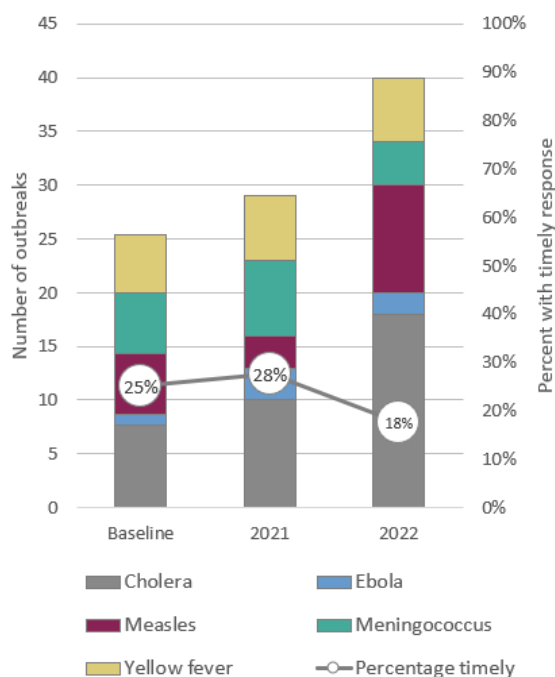


Figure 37: Number of outbreaks at baseline and in 2021 and 2022 requiring a response vaccination campaign by disease, and percentage of outbreaks where timely response criteria were met. Baseline outbreak count is the average number of outbreaks by disease 2018–2020.

* Baseline outbreak count is the average number of outbreaks from 2018-2020 (shown by VPD), the percent is the average number with timely response for all VDPs in the same time period.

¹¹ Wild poliovirus and cVDPV outbreaks are not included and will be reported in subsequent years.

The proportion of outbreaks for which internationally supported outbreak response vaccination campaigns met targets for timely responses declined in 2022 to 18%, compared to 28% in 2021 and 25% at baseline¹². Outbreak responses to multiple diseases contributed to this shift. For example, the proportion of yellow fever outbreak responses that met timeliness targets declined markedly from 50% in 2021 to 0% in 2022, while the proportion of meningococcal disease outbreak responses that met timeliness targets declined from 14% to 0%. Although MenA vaccine is the only vaccine for meningococcal disease in routine use in the African meningitis belt, responses are based on use of the most appropriate vaccine. A newly WHO prequalified multivalent meningococcal vaccine will provide a new tool for prevention of meningococcal disease in Africa (and elsewhere).

By contrast, the proportion of measles and cholera outbreak response campaigns for which timeliness targets were met increased in 2022, to 20% for measles and 17% for cholera. However, these figures are still below the baseline values of 29% for measles and 30% for cholera. Since measles and cholera outbreak responses accounted for more than 70% of all internationally supported outbreak response vaccination campaigns, the timeliness of responses to these outbreaks has a major impact on the overall timeliness figure.

In contrast to the general trend, Ebola virus disease outbreak response vaccination campaigns continued to be consistently timely, with two out of two such campaigns in 2022 meeting the relevant timeliness target, contributing to the rapid containment of both outbreaks.

In 2022, outbreak detection and response for yellow fever and cholera was complicated by the fact that outbreaks occurred in countries and areas where the diseases had not been detected for years, if ever. For example, cholera outbreaks occurred in Syria, Lebanon, Haiti and Malawi after years or decades without outbreaks, while a yellow fever outbreak was detected in an area in central Kenya where the disease had not been reported before. Promptly detecting and responding to unfamiliar diseases is often a challenge for the peripheral health system.

Given the likelihood that many vaccine-preventable diseases will appear in new areas in the future, for example because of climate change, disease control programmes need to be adaptable to a changing environment, including by detecting and responding to outbreaks quickly and by putting appropriate preventive measures in place following an outbreak. In all at-risk areas, such measures can include: yellow fever, meningococcal disease and measles routine immunization; cholera, yellow fever, meningococcal disease and measles preventive vaccination campaigns; and improvements to water and sanitation to limit the transmission of cholera.

If outbreaks recur in an area, use of vaccine already present in affected countries can substantially accelerate responses. Vaccine that subsequently arrives from outside of a country can then be used to augment the response and replace the doses used initially. This approach works particularly well for diseases with vaccines used in routine immunization, such as measles and yellow fever.

Given the overall decline in outbreak responses that met timely outbreak detection and response criteria in 2022, there is considerable scope to improve the detection of vaccine-preventable disease outbreaks, to accelerate globally supported responses to those outbreaks, and to initiate rapid outbreak responses using vaccine already present in affected countries and other measures, with proper planning so as not to lead to vaccine stock-out later in routine immunization. For example, continuously updating global outbreak response

¹² Data apply to globally supported outbreak responses. Outbreak responses conducted entirely with national resources are not captured here, and patterns may differ from those described.

support mechanisms, including outbreak response guidance, to reflect lessons learnt and best practices and ensure provision timely technical assistance to countries, will help improve early detection, investigation, notification and response to outbreaks.

SP 6.1 Global Healthy Vaccine Markets

Indicator: Health of vaccine markets, disaggregated by vaccine antigens and country typology

Take-home messages:

- **2022 data for this indicator will be available later in 2023.**

Market health is a multi-faceted composite indicator incorporating the number of manufacturers, global reach and development pipelines. The health of a vaccine market includes an assessment of the total number of suppliers, relative concentration among them, ability to distribute globally and the state of the development to quantify whether the market is healthy, concerning, or unhealthy. The total number of suppliers making a specific vaccine only gives a partial picture; the market share of the two largest producers provides a sense of how balanced the market is between different suppliers, while “reach” indicates how many vaccines are truly available globally. Lastly, the “innovation” criterion indicates the number of vaccines in late-stage development.

SP 6.2 Financial resources for immunization programmes

Indicator: Proportion of countries whose domestic government and donor expenditure on primary health care increased or remained stable

Take-home messages:

- **Of 24 countries for which data are available¹³, more increased their per capita domestic government and donor expenditure on primary health care between 2019 and 2020 than between 2018 and 2019 (Figure 38).**
- **The data suggest that these countries as a group are committed to investing public and external resources into primary healthcare services, although 2020 was a special year due to COVID-19 pandemic. Although some progress is apparent, efforts are required to keep promoting greater political commitment to primary healthcare and adequate domestic and donor financing.**
- **Data are needed from a wider sample of countries to confirm trends and progress towards sustainable financing for immunization as part of primary healthcare.**

Data for this indicator are drawn from WHO’s Global Health Expenditure Database (GHED) based on estimates of primary healthcare (PHC) expenditure using the functional classification of the System of Health Accounts 2011 framework. This framework tracks first-contact personal services, population-based services, and some other cross-functional characterization of spending (most notably, governance and medical goods).

¹³ Six low-income, nine lower middle-income and eight upper middle-income.

Estimates of government and donor expenditure on PHC were available for all 3 years between 2018 and 2020 for only 24 countries. This small sample means that results are not necessarily representative of all WHO Member States and should be interpreted cautiously as indicative of possible trends.

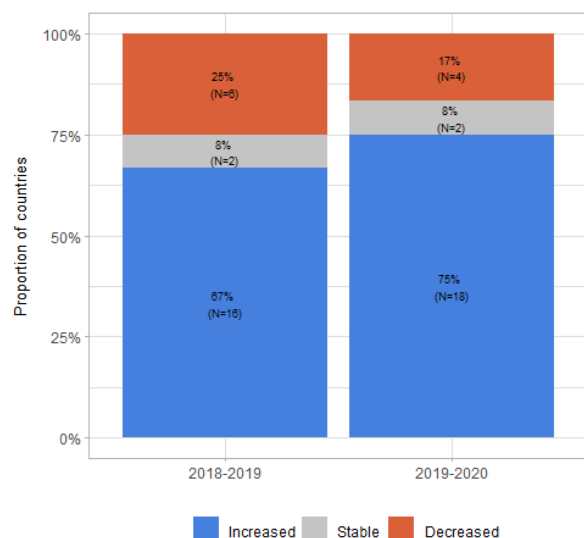


Figure 38: Proportion of countries whose domestic government and donor expenditure on primary health care per capita USD increased, remained stable or decreased, per capita USD. Data are from 24 countries, a combination of low-income (six), lower middle-income (nine) and upper middle-income (eight) countries.

SP 6.3 Immunization expenditure from domestic resources

Indicator: Proportion of countries whose share of national immunization schedule vaccine expenditure funded by domestic government resources increased or remained stable

Take-home messages:

- In 61% of the 56 low- or middle-income countries for which data were available (42% of such countries), the share of expenditure on vaccines paid by government increased or remained stable annually between 2018 and 2022 (baseline: 68% between 2018 and 2019) (Figure 39).
- Since 2021, more countries reduced the share of vaccine expenditure paid with public funds than between 2018 and 2020, a likely consequence of the insecure economic climate or, in some cases, introduction of new vaccines supported by Gavi and other partners, leading to a greater proportion of vaccine expenditure paid by donors.
- Although some progress is apparent, data are from a limited number of countries; further efforts are required to promote greater political commitment to immunization and adequate domestic financing.
- The analysis does not include domestic expenditure on COVID-19 vaccination.

The financial sustainability of national immunization programmes will ultimately depend on the availability of domestic funding to support all national immunization activities. Progress towards this long-term goal is monitored through an indicator tracking sustained or increasing domestic expenditure on vaccines in low- and middle-income countries.

Data on vaccine expenditure were available for all 5 years (2018–2022) for only 42% of the 132 WHO Member States classified as low-, lower middle-, and upper middle-income countries by the World Bank in 2019. Hence results are not necessarily representative of all countries and should be interpreted with caution as indicative of possible trends.

Data availability remains an issue given low reporting across all four years. WHO, UNICEF and other partners are developing a plan with ministries of health for improving the response rate and quality of the data reported on expenditure on vaccines.

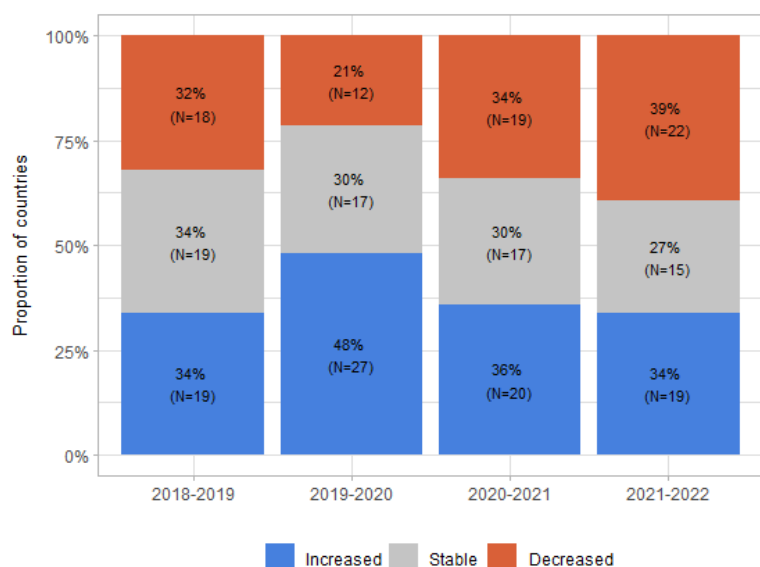


Figure 39: Proportion of low- and middle-income countries (N=56) whose share of vaccine expenditure funded by domestic government increased, remained stable or decreased.

Based on World Bank classification in 2019
Cook Islands and Niue are excluded as they are not classified by World Bank

SP 7.1 Capacity for innovation

Indicator: Proportion of countries with an immunization research agenda

Take-home messages:

- In 2022, 26 out of 194 (13%) countries reported having a national agenda for research on immunization (Figure 40).
- Findings varied across WHO regions, with the highest proportion in the South-East Asian Region and the lowest proportion in the Region of the Americas for both years; this variability is similar to that seen last year.
- 11 out of the 26 (countries 42%) that reported having a national agenda for research on immunization were upper middle- or high-income countries; 15 (58%) were lower middle- or low-income countries.

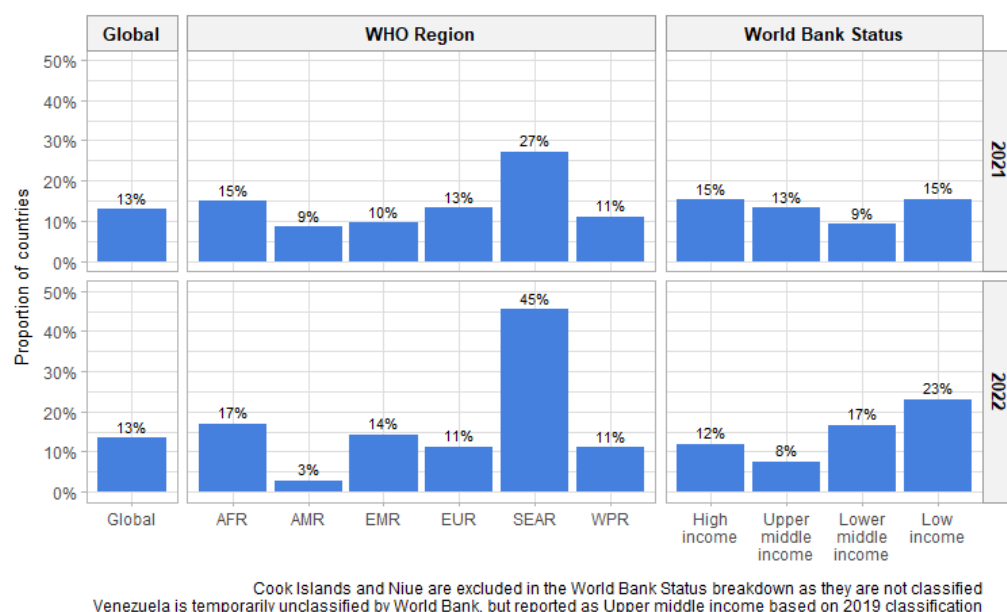


Figure 40: Proportion of countries reporting having a national agenda for research on immunization.

The data suggest that relatively few countries have a national agenda for research on immunization. Actual numbers could be even lower, as countries were asked to attach documentation or provide a link to their research agendas, which generally did not occur.

Given that so few countries reported having a research agenda for immunization, the **SP7 Working Group** (WG) has been discussing whether encouraging countries to develop stand-alone research agendas on immunization is appropriate. Among the concerns raised by the WG has been whether it is reasonable to expect low- and middle-income countries to have the kinds of capacity and budget to support research prioritization and agenda setting processes as exist in higher income countries. Furthermore, it has been acknowledged that such processes may be neither coordinated nor implemented by national immunization programmes but implemented by others from universities or research institutions.

Deliberations among the SP7 WG members remain ongoing, with further consideration being given to the possibility that research prioritization and agenda setting may be best coordinated at a national or regional level, when it comes to IA2030 objectives and progress indicators. The WG therefore intends to draw up a proposal for the redefinition of the 7.1 strategic focus area and its associated indicator, placing more emphasis on the need to clarify and strengthen processes that identify evidence gaps and enabling the prioritization of evidence needs by national and regional teams.

Before a new indicator can be defined, it was determined that a mapping exercise is required on the processes at country level that inform research agendas, focusing especially on how evidence needs are identified, prioritized and communicated. Once mapped out, an assessment of gaps and needed support can be conducted to inform guidance development driven by the SP7 WG, in coordination with regions and countries. The WG will propose methods such as implementation research to address the gaps when identified.

SP 7.2 New vaccine development

Indicator: Progress towards global vaccine research and development targets

A methodology to identify priority pathogens for new vaccine development, to serve as indicators for SP7.2, has been developed through engagement of key stakeholders at the country, regional and global levels. This is based on a partnership between the SP7 Working Group, WHO's Product Development for Vaccines Advisory Committee (PDVAC) and members of Regional Immunization Technical Advisory Groups (RITAGs). In 2022, a survey was developed using a Multi-Criteria Decision Analysis (MCDA) approach and the PAPRIKA tool¹⁴. The survey was developed with input from key global and regional stakeholders and disseminated widely. Preliminary results have been analysed and were presented to SAGE in March 2023. In 2023 and 2024, the pathogen targets identified through the survey will be refined through further stakeholder engagement among regions and key potential academic and industry partners.

The aim of the regional and global lists is to create alignment among regional and global health research and innovation organizations on which vaccine research and development efforts should be supported. Regional and global lists may also assist low- and middle-income countries that are establishing local production of vaccines in deciding which pathogens to target for vaccine development, based on their regional context. Multinational vaccine manufacturers, biotech companies, and academic and other research organizations may also use the information to determine their priorities for vaccine research and development.

SP 7.3 Evaluate promising innovations and scale up innovations

No indicator

Similar to SP7.1, this focus area is also in the process of being reconsidered by the SP7 WG, in the recognition that it is highly linked to the consideration of research needs and evidence gaps, where a greater regional role may be required. While 7.3 will remain oriented around implementation and operational research, it was agreed that it could better reflect the need to empower countries to appropriately define their evidence needs and research opportunities. A new objective for 7.3 and consideration of an appropriate indicator are therefore part of the upcoming agenda for the SP7 WG, with the expectation that the new objective will concern the definition of research and capacity gaps, as well as the means to address them, which will first require progress on SP7.1.

¹⁴ Hansen P, Ombler F. A new method for scoring additive multi-attribute value models using pairwise rankings of alternatives. *J. Multi-Criteria Decision Analysis*. 2008;15(3-4): 87–107

E. IA2030 implementation

Efforts have continued at the national, regional and global level to implement strategies and action plans aligned with the global IA2030 strategy.

E1. Countries

Countries have been encouraged to develop strategic medium- to long-term plans through the National Immunization Strategy (NIS) to define their immunization vision and their programmatic priorities for the coming 3 to 5 years.

WHO and UNICEF have been working together at the country, regional and global levels to support countries in these efforts. In the past year, four regional NIS workshops were organized in the African and Eastern Mediterranean Regions, with up to 65 countries participating. A dedicated session was organized with countries in the South-East Asian Region and additional engagement is planned with the Region of the Americas and Western Pacific Region to further support countries in their NIS strategic planning efforts.

In total, 23 countries have developed an NIS and 18 countries are in the process of finalizing their NIS. An additional 35 countries are planning to develop their NIS over the 2023/2024 period.

To leverage available funding opportunities, to strengthen immunization sustainability, and to improve synergies and efficiency of donor-supported immunization programmes, WHO and UNICEF have been engaging with the Gavi secretariat to strengthen the linkages between NIS and Gavi Full Portfolio Planning processes and prioritization of areas for investments.

E2. Regions

Most regions have developed **Regional IA2030 Strategic Plans or Frameworks** to guide their activities over the decade. Some have also begun to develop shorter-term implementation plans. Regions have also begun to develop **monitoring and evaluation frameworks** aligned with the global framework but tailored to local contexts. Further details can be found in the review of regional activities (section G).

At a face-to-face meeting of global and regional stakeholders held in February 2023, discussions highlighted the need for a greater focus on implementation of IA2030 at the regional level. It was recognized that regions are best placed to understand the context-specific challenges of their countries, and regional structures can provide opportunities for coordination and closer alignment of partner support.

One model assessed to have been successful was the **Regional Working Group** structure, used by immunization partners to coordinate activities at the regional level. Regional Working Groups were leveraged by the COVID-19 Delivery Partnership (CoVDP) to enhance coordination, bringing together key stakeholders to accelerate the introduction of COVID-19 vaccination into priority countries. This model enhanced interagency communication and coordination both horizontally (across partners) and vertically (across country, regional and global levels). With the transition of CoVDP to usual partnership business models during 2023, further strengthening of the Regional Working Group model across all areas of immunization is being explored with regional stakeholders.

Some regions already have Regional Working Groups to ensure coordination and alignment across immunization partners, but others do not yet have such structures. Discussions are being held with the regions

to assess issues such as the perceived need and value of such coordinating structures, roles and responsibilities, resource requirements, relationships with other key regional structures such as Regional Immunization Technical Advisory Groups (RITAGs), integration within existing regional monitoring and evaluation and action mechanisms, and the balance between coordination at regional and country levels.

E3. Global

The **IA2030 Coordination Group (IACG)**, which includes representatives of key partner organizations, continued to meet on a monthly basis during 2022 and 2023. The meetings provide an opportunity to vet issues of mutual interest, ensure closer alignment across partners, and activate specific actions by partners to address bottlenecks or fill gaps.

The **IA2030 Partnership Council (IAPC)**, which includes a range of senior leaders from partner organizations and other thought leaders in global health, meets twice yearly. The Partnership Council has a critical role to play in assuring that partner organizations are prioritizing immunization in their resource allocation and assuring the highest levels of advocacy for immunization. The Partnership Council released a joint call to action following publication of WUENIC data in July 2023.

A first **face-to-face meeting** of global and regional IA2030 stakeholders was held in Geneva in February 2023. The discussion event, which focused on how stakeholders could work together most effectively to drive progress at the country level, was attended by members of the IA2030 Coordination Group, IA2030 Working Group leads, WHO Regional Advisers and representatives of other partner organizations.

As well as recognizing the need for the centre of gravity of IA2030 to shift more towards the regional level, the discussions also concluded that there was significant potential to build on existing platforms such as TechNet-21, the Geneva Learning Foundation (TGLF) and others to promote consultative engagement with national- and subnational-level practitioners.

The IA2030 architecture has been strengthened by integration with the **Measles and Rubella Partnership (M&RP)**. The IA2030 Coordination Group has assumed responsibility for achieving the objectives of the Measles and Rubella Strategic Framework¹⁵. This will help to ensure that efforts to combat measles, a key tracer of immunization programme performance, are fully aligned with IA2030's wider immunization programme-strengthening agenda.

Communications and Advocacy

The core focus of the Communications and Advocacy (C&A) Working Group is to ensure that immunization remains a political priority at global, regional and country levels. This is achieved through coordinating clear global messaging across partners, and facilitating high-level moments that bring together partners and focus on IA2030 goals at key events such as the World Health Assembly (WHA), United Nations General Assembly (UNGA), and G7 and G20 fora.

As well as coordination of messaging and follow-up activities among IA2030 partners for the Big Catch-Up advocacy and communication initiative, other key activities have included:

- Coordination of a joint IA2030 statement delivered by Gavi at the UN universal health coverage (UHC) multi-stakeholder hearing contributing to the high-level declarations on pandemic preparedness and

¹⁵ <https://www.who.int/publications/i/item/measles-and-rubella-strategic-framework-2021-2030>

response, UHC and TB, along with ongoing advocacy ahead of the finalization of these declarations at UNGA in September 2023.

- Organization of an IA2030-specific **WHA side-event** co-hosted by the Governments of India and Brazil, IA2030, UNICEF, Gavi, the Bill & Melinda Gates Foundation, and the United Nations Foundation. Speakers included Ministers of Health from Argentina, Brazil, the Democratic Republic of the Congo (DRC), India, the Commissioner for Health, Humanitarian Affairs and Social Development for the African Union, and leaders of IA2030 global partners. Commitments included ensuring that immunization is given appropriate consideration within the G20 agenda.
- Coordination of an **IA2030 Partnership Council statement** responding to the 2023 WEUNIC data as part of the global press pack developed by WHO and UNICEF.
- Support and amplification for **key immunization moments** such as the launch of the IA2030 Scorecard in autumn 2022, measles and rubella data release, and World Malaria Day.

Priority future activities include:

- Harnessing the role of the IA2030 Partnership Council which, through its individual members and collective voice, has the potential to amplify and expand IA2030 influence.
- Building on country and regional buy-in represented by WHA endorsement of IA2030 and better integration of communications and advocacy as part of wider coordination of partner efforts.
- Exploring the potential for IA2030 partners to make collective statements to drive progress on immunization. Following the WUENIC statement from the IA2030 Partnership Council, there are opportunities for collective messaging at UNGA and into 2024, which marks the 50th anniversary of the EPI initiative.
- Providing ongoing support for the dissemination of materials, reports and messages from IA2030 Working Groups and consultative engagement efforts.

Monitoring and Evaluation Working Group

The Monitoring and Evaluation (M&E) Working Group provides guidance on the implementation of IA2030 monitoring, evaluation and action cycles, and has been working closely with groups monitoring global IA2030 indicators.

Key activities have included:

- Supporting the development of IA2030 reporting outputs, including the 2022 Technical Progress Report, the 2023 Partnership Progress Report, and the IA2030 Scorecard.
- Developing a template to collect information and support planning processes for future in-depth reviews by IA2030 Working Groups.
- Engaging with the regions and providing support during the development of their regional monitoring and evaluation frameworks.
- Developing refined terms of reference for the M&E Working Group, including stronger collaboration with the Data Strengthening and Use Working Group, to inform a short-term M&E workplan.
- Developing metadata for IA2030 global impact goal and strategic priority indicators, in collaboration with technical focal points.

F. Taking forward the recommendations from the 2022 Technical Progress Report

Actions have been taken at the national, regional and global level in response to the recommendations included in the 2022 Technical Progress Report.

Urgent actions to address backsliding

1. **Support restoration and recovery:** Work with countries to identify the technical support and national, regional and global actions and technical support needed to strengthen national essential immunization services and surveillance systems as part of integrated primary healthcare systems strengthening and pandemic preparedness.
2. **Leverage COVID-19 lessons:** Work with countries to identify and share successful approaches for mainstreaming COVID-19 vaccination into the delivery of essential immunization services and primary health care, and to establish or strengthen platforms to deliver primary health care interventions across the life-course.
3. **Accelerate integrated catch-up:** Work with countries to support the design and implementation of catch-up activities that are equity-focused, tailored to local contexts and encompass children beyond two years of age; use root cause analyses to shape the design of essential immunization services; and establish policies that facilitate vaccination beyond the scheduled target age for those missing vaccination.

Response:

The improvement in global coverage for key indicators and the reduction in the numbers of zero-dose children indicate that many countries have made considerable progress in these areas – although much more remains to be done. One practical challenge is that, because of national immunization data recording processes, it is difficult to quantify the numbers of missed children that are caught up.

At the global level, efforts in this area have been focused mainly on the top 20 countries with the largest numbers of zero-dose children in 2021 (Figure 1), through the development and launch of the multi-partner **Big Catch-Up advocacy and communication initiative**. This initiative is based on three pillars:

- **Catch-up:** Reach children who missed out on vaccination during the pandemic years.
- **Restore:** Return vaccination coverage to at least the levels seen in 2019.
- **Strengthen:** Build the capacity of immunization programmes within primary healthcare systems, to reduce the numbers of children in future birth cohorts who miss out on vaccination and resume the trajectory of performance that will lead to the IA2030 goals.

Global partners have been working collectively through a “**one plan, one budget, one team**” approach. The aim is to facilitate country-led development of **national Big Catch-Up action plans**, integrated within existing immunization and wider health service plans. **Technical support** is being provided by partners to facilitate development of these action plans. Where necessary, advice is also being provided on the **updating of national policies** to allow immunization of children older than 2 years of age – essential for catch-up but outside the scope of some countries’ immunization policy frameworks.

Countries have been defining their own lists of **priority antigens** for intensified catch-up efforts, but global recommendations emphasize the need to prioritize measles, rubella, polio, diphtheria, yellow fever and

meningococcal A to address the risk of outbreaks. Tetanus boosters, hepatitis B birth dose and HPV vaccine are also critical to ensure protection of children and adolescents before exposure.

Funding for new activities is predominantly being generated from mobilization of existing resources, with financiers such as the World Bank exploring (at the request of countries) the availability of resources under existing projects (such as COVID-19 vaccine financing projects) or new/pipeline projects and Gavi agreeing to greater flexibility in reallocation of resources to support catch-up immunization activities for children missed during the pandemic. Gavi has also agreed to provide funding to cover the additional Gavi-supported vaccine doses to be used in proposed catch-up activities to reach children up to 5 years of age.

Complementary planned activities include **advocacy** for enhanced national investment in immunization, with heads of global agencies due to write to political leaders in the 20 focus countries to urge greater support for immunization and strengthened primary healthcare systems.

As at mid-July 2023, eight countries have completed their proposed action plans, five are at an advanced stage of drafting, and four have begun the planning process. These efforts will build on catch-up and strengthening activities that have already been taking place in countries such as:

- **India:** Intensified Mission Indradhanush to catch-up on missed children ongoing since October 2019; in 2023, the age range will be expanded to include children up to 5 years for priority antigens.
- **Indonesia:** Catch-up campaign during National Child Immunization Month in 2022 for children aged 12–59 months.
- **Brazil:** Enhanced coverage through Active Vaccine Search and demand generation using social media, reaching 223,000 users in December 2022.
- **Pakistan:** Enhanced outreach activities conducted in all districts after lockdown, with more than 1 million sessions held in 2020. Pakistan has also updated its national vaccination policy to include a routine catch-up schedule for children up to 5 years old.

Although the 20 countries with the largest numbers of zero-dose children have been prioritized for global advocacy and intensified technical support, all countries have been urged to adopt the principles of the Big Catch-Up and to use local evidence-based strategies to reach missed children and to strengthen immunization programmes.

Medium- and long-term actions to strengthen immunization programmes

1. **Enhance the health workforce:** Work with countries and other health system stakeholders to map out current and anticipated health workforce needs; identify and address factors affecting health worker retention; and use new learning and performance management approaches to enhance health worker capacity and improve the quality of service delivery.
2. **Prioritize health:** Work with countries to ensure prioritization of health, primary healthcare and immunization in government budgets; promote the efficient use of resources; and identify strategies to mobilize additional global financing for immunization and health system strengthening and resilience.
3. **Promote equity:** Work with countries to strengthen systematic equity monitoring within national immunization programmes, to underpin mitigating actions to reduce socio-economic and geographical disparities in vaccination coverage within countries, including strengthening of cross-sectoral subnational accountability mechanisms.

4. **Strengthen demand generation:** Work with countries to promote the use of globally validated tools to assess behavioural and social drivers of vaccination at all levels of immunization programmes, and use the data for understanding reasons for low uptake and to guide continued implementation and improvement of strategies to close gaps in immunization coverage and equity.

Response:

Given the short-term need to respond to the COVID-19 pandemic-related backsliding and focus on the Big Catch-Up initiative, the urgent actions discussed above have been the main global focus in 2022/2023. However, work in these areas has been taken forward in regions according to local contexts and priorities (see page 59), and by IA2030 Working Groups in line with their specific areas of technical expertise (see page 90).

Actions to address new vaccine introductions

1. **Accelerate new vaccine introductions:** Work with countries to understand and overcome barriers to the introduction of WHO-recommended vaccines, and to prioritize their introduction based on country context and disease burdens.
2. **Advance vaccination in adolescence:** Work with countries to identify the most effective ways to strengthen platforms for vaccination in adolescence, with an emphasis on cross-sector collaboration, particularly to reach those who missed human papillomavirus (HPV) vaccination because of COVID-19-related disruption, to extend HPV vaccine coverage, and to introduce HPV vaccination where it has yet to be implemented.

Response:

A small increase was seen in the number of introductions of new and under-utilized vaccines in low- and middle-income countries in 2022, with a particular increase in low-income countries. In part, this reflects Gavi-supported introductions that were put on hold because of the COVID-19 pandemic.

Global HPV vaccination coverage rose slightly in 2022 and is marginally above 2019 coverage levels. However, global coverage remains low (15% for HPVc), bringing into doubt global cervical cancer elimination objectives and leaving millions of women at risk of a mostly preventable life-threatening disease.

Gavi and partners have launched a new HPV initiative to reach 86 million adolescent girls in low- and middle-income countries by 2025 – which could have the potential to avert more than 1.4 million future deaths from cervical cancer. This revitalization focuses on three areas:

- **Introductions:** Promoting new introductions in countries yet to implement HPV vaccination.
- **Catch-up and strengthen:** Implement multi-age cohort vaccination to rapidly catch up and improve coverage.
- **Integration:** Promoting sustainability through the integration of HPV vaccine into immunization programmes and primary healthcare.

In addition, countries will be supported to implement the 2022 SAGE recommendation on use of a single-dose HPV vaccine schedule, which could have a significant impact on country decision-making on vaccination strategies and coverage.

Actions to accelerate vaccine development

1. **Invest in vaccine research:** Strengthen the global research environment for new vaccine development and implementation, for example through increased investment in new vaccine R&D for priority

pathogens, leveraging COVID-19-driven technological innovations, strengthening national regulatory systems and global regulatory collaboration, and diversifying global manufacturing capacity

Response:

Responses in this area have been led by IA2030 Working Group for SP7 and are oriented around the key focal areas included in the IA2030 global strategy (see page 49). Activities have included a consultation on pathogen prioritization for new vaccine development, with extensive regional/country engagement.

A longer summary of progress in this area was included in the 2023 Partnership Progress Report¹⁶.

Actions to enhance coordination and promote continuous quality improvement

1. **Enhance knowledge sharing:** Create a “knowledge-sharing hub” where partners can share their analyses and intelligence, and other evidence relevant to achieving IA2030 objectives.
2. **Achieve change:** Establish monitoring, evaluation and action (ME&A) cycles with a feedback loop at global and regional levels to take forward and report on this action agenda (see Annex 1).

Response:

No progress has been made on the knowledge-sharing hub for partners. The need for this platform will be considered as the IA2030 Coordination Group develops work plans for 2023/2024.

The **global ME&A cycle** is based on the monitoring of indicators within the IA2030 M&E framework, and the use of these data to drive action at the global level. Following feedback on the recommendations included in the 2022 Technical Progress Report from regions and Working Groups, and discussions at the IA2030 Coordination Group, the format of recommendations had been refined to provide a streamlined list of priorities for stakeholders at all levels (the action agenda, page 7). It is anticipated that these will inform the activities of global partners, with the work plans developed by the IA2030 Coordination Group providing one mechanism to align and synergize activities across partners.

Discussions are taking place with regional stakeholders on the development of a **regional IA2030 architecture** based on cross-partner Regional Working Groups. This engagement will include discussions on how to nest **regional ME&A cycles** within this architecture, taking into account the existing mechanisms that already exist in regions. A meeting on immunization data use in the era of IA2030 in September 2023 will provide an opportunity to discuss these issues.

¹⁶ <https://www.immunizationagenda2030.org/ia2030-annual-reports>

G. Regional summaries

Activities in each WHO region have been organized to support countries and accelerate progress towards IA2030 objectives.

G1. African Region

2022 summary:

- **Key immunization coverage indicators, including DTP3, DTP1 and MCV1 remain below 2019 baseline levels.**
- **Numbers of zero-dose children increased in 2022; the African Region has more zero-dose children than any other WHO region.**
- **Rapid population growth means more children need to be immunized each year just to maintain existing coverage levels.**
- **Multiple countries have developed or are developing National Immunization Strategies.**

Progress towards region-specific targets

Over the past two decades, the African Region has made tremendous progress in improving access to immunization – progress that can and must be regained to protect all people from vaccine-preventable diseases (VPDs). Thanks to the efforts of Member States, donors, NGOs, immunization partners, healthcare workers and communities, several diseases are now on the brink of elimination or eradication, and new vaccines have been introduced in many countries.

In 2020, the African Region was certified free of wild poliovirus, a monumental achievement. Although importations of wild polioviruses in Mozambique and Malawi have been detected, effective responses led to interruption of transmission. New innovations and technologies are helping to deliver vaccines to hard-to-reach communities and advancing immunization equity.

In the African Region, COVID-19 has significantly disrupted routine immunization services and vaccination campaigns for diseases such as polio, cholera, measles, yellow fever, meningitis and HPV. The resulting disease burden has the potential to be devastating not only to the individuals, but also to communities and countries at large. Similarly, recent outbreaks of VPDs – including yellow fever, measles, cholera, meningitis, circulating vaccine-derived poliovirus (cVDPV) and Ebola – point to gaps in immunization coverage.

As a result, immunization coverage has fallen short of regional and global targets. The African Region has witnessed a worrying decline in immunization coverage over the past 4 years:

- **DTP1 decreased** from 82% in 2019 to 80% in 2022.
- **DTP3 decreased** from 77% in 2019 to 72% in 2022.
- **MCV1 decreased** from 71% in 2019 to 69% in 2022.

There has been some progress in MCV2, with coverage rising from 33% in 2019 to 45% in 2022, but coverage is still sub-optimal.

Table 3: Coverage trends in the African Region, 2013–2022

Antigens	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
BCG	80%	78%	81%	82%	82%	82%	80%	78%	78%	77%
DTP1	80%	80%	81%	83%	83%	82%	81%	79%	79%	77%
DTP3	72%	72%	74%	77%	76%	74%	74%	71%	71%	70%
MCV1	69%	68%	70%	71%	70%	70%	69%	68%	69%	70%
MCV2	45%	41%	40%	33%	25%	25%	22%	17%	10%	7%
Polio3	71%	72%	73%	77%	75%	73%	73%	72%	71%	70%
HepB3	72%	72%	74%	77%	76%	74%	74%	71%	71%	69%
Hib 3	72%	72%	74%	77%	76%	74%	74%	71%	71%	66%
YF	45%	46%	46%	47%	47%	43%	40%	41%	40%	38%
Rota (last dose)	51%	52%	52%	50%	46%	43%	42%	37%	29%	12%

The region has also been the largest contributor to zero-dose children globally during the last decade (Figure 1).

Nevertheless, some countries have achieved significant progress:

- Chad has increased DTP3 coverage from 50% in 2019 to 58% in 2021 and 60% in 2022, and has reduced its numbers of zero-dose children.
- Burundi and São Tomé and Príncipe maintained their DTP3 coverage above 90% in 2019, 2021 and 2022.

Region-specific factors affecting immunization coverage and other key indicators

Contextual factors that have negatively influenced immunization coverage include multiple competing developmental priorities, gaps in country ownership, lack of community engagement, low data reliability and use, limited logistics capacity, inadequate and uneven distribution of the workforce, and weak health systems aggravated by insecurity and disease outbreaks in various countries.

Compounding these challenges, the COVID-19 pandemic has disrupted essential health services, including immunization. Based on SAGE recommendations for continuity of essential services delivery during the COVID-19 pandemic, countries took steps to resume routine immunization programmes and carry out catch-up campaigns with heightened infection prevention and control measures in place, but millions of children have missed out on vaccinations because of service disruptions in 2020 and 2021.

Key activities undertaken to support countries

The African Region is implementing the roadmap for the 2016 Addis Declaration on Immunization (ADI)¹⁷ to drive the achievement of the goals of the IA2030 through the operationalization of the Business Case for Immunization in Africa 2018–2030 and the Investment Case for Vaccine-Preventable Diseases Surveillance in the African Region 2020–2030.

This is being done through:

- Driving political advocacy and engagement with the following objectives:

¹⁷ [https://www.afro.who.int/health-topics/immunization/the-addis-declaration-immunization#:~:text=The%20Addis%20Declaration%20on%20Immunization%20\(ADI\)%20is%20a%20historic%20pledge,the%20full%20benefits%20of%20immunization](https://www.afro.who.int/health-topics/immunization/the-addis-declaration-immunization#:~:text=The%20Addis%20Declaration%20on%20Immunization%20(ADI)%20is%20a%20historic%20pledge,the%20full%20benefits%20of%20immunization)

- To reignite the political will of Africa's leaders to keep universal access to immunization through primary healthcare platforms at the forefront of national recovery efforts intended to achieve long-term health, economic and development goals.
- To renew political commitment to supporting investments in strengthening surveillance to detect outbreaks quickly, respond with urgency and immunize all children who are not yet protected from VPDs in Africa, including investments in improved laboratory detection methods.
- To motivate urgent integration of polio functions, assets, innovations and lessons to accelerate last-mile polio eradication action and boost routine immunization capacities.
- Support for National Immunization Strategies (NIS) development: Three NIS workshops conducted for countries in the region (September and October 2022 and April 2023) and countries are at various stages of NIS development:
 - West Africa:**
 - **4** countries (Burkina Faso, Côte d'Ivoire, Liberia, Togo) completed.
 - **1** country (Sierra Leone) at advanced stage.
 - **5** countries (Gambia, Guinea, Mauritania, Mali, Niger) are at an early stage.
 - **6** countries (Algeria, Benin, Cabo Verde, Ghana, Nigeria, Senegal) are yet to start.
 - **Nigeria** has a comprehensive integrated strategic plan up to 2028.
 - Central Africa:**
 - **1** country (Burundi) completed.
 - **3** countries ongoing at various stages of development (Democratic Republic of the Congo, Cameroon, Central African Republic).
 - **4** countries have NIS development planned for the end of 2023 (Angola, Congo, Chad, São Tomé and Príncipe).
 - **2** countries (Gabon, Equatorial Guinea) are yet to start.
 - Eastern and Southern Africa:**
 - **7** countries completed (Comoros, Eritrea, Madagascar, Rwanda, Uganda, Zambia, and Zimbabwe).
 - **4** countries at various stages of development (Botswana, Malawi, South Africa, South Sudan).
 - **6** countries have NIS development planned (Eswatini, Lesotho, Mauritius, Mozambique, Namibia, Seychelles; also Zanzibar).
 - **3** countries have existing and active immunization strategic plans (Ethiopia, Kenya, Tanzania (NIS pilot country)).
- Engagements with countries on the implementation of the essential immunization recovery plan:
 - The African Region, through coordination by the Eastern and Southern Africa (ESA) and West and Central Africa (WCA) Regional Immunization Working Groups, has prioritized 14 countries for focused support. WHO has helped to organize peer-review workshops to guide development of immunization catch-up and recovery plans, central to implementation of the Big Catch-Up initiative to revitalize immunization systems.
- Support for the establishment of national immunization technical advisory groups (NITAGs):
 - 42 Member States have now established NITAGs that are capacitated to provide evidence-based recommendations on introduction of new vaccines, immunization schedule change or changes in vaccine formulations. External evaluation of NITAG maturity was undertaken in multiple countries in 2023. However, five countries – Cabo Verde, Gabon, Central African Republic, São Tomé and Príncipe, and Equatorial Guinea still do not have NITAGs.

Progress made in development or implementation of a regional M&E framework and IA2030 operational model

The African Region has developed a Framework for the Implementation of IA2030 through a rigorous consultative process. Its development was based on the global vision and is aligned with the Regional Committee resolution on universal health coverage.

The framework also captures the impacts of COVID-19, and the lessons learnt from the response to the pandemic and associated service disruptions. The framework's vision, goals, objectives, milestones and targets are guided by the UNGA, WHA and Regional Committee resolutions. The monitoring framework is well developed, with Member States expected to report annually against specified indicators included in the Regional Strategic Plan for Immunization 2021–2030 (RSPI).

Key objectives and planned activities for the coming year

1. Support political commitment:

- Increase engagement with the leadership of Member States to prioritize immunization.
- Promote accountability, including peer review using monitoring dashboards and annual reporting through the M&E indicators of the RSPI and ADI.
- Facilitate stronger partnerships (joint plans, one budget) to identify and respond to gaps.
- Impact-shedding: joint efforts to reduce reliance on external funding.

2. Support country resource mobilization efforts:

- Facilitate NIS development, to provide clarity on resourcing.
- Increase engagements with countries on available instruments for resourcing for health.
- Utilize joint plans and one budget to avoid duplication of efforts.
- Improve resourcing at regional and country levels.
- Improve human resources – dedicated staff to drive IA2030 goals at regional and country levels.

3. Build strong partnerships and improve coordination and collaboration:

- Identify, collaborate and improve efficiency through stronger partnerships and integration (at regional, national, sub-national and community levels).
- Develop and implement a framework for coordination and increased involvement of non-state actors.
- Improve partnership coordination models – including joint plans, budgets and monitoring.
- Increase information sharing across partners.
- Promote the “one team, one plan, one budget” approach.
- Coordinate with disease-specific initiatives, especially for identifying zero-dose and under-immunized children during vaccination campaigns.

4. Promote and support strong and resilient health systems through the use of innovative technologies:

- Scale up existing pilots with demonstrated results across the region.
- Optimize and increase investments in infrastructure and technology for health.
- Showcase, document and disseminate examples of successful progress to countries for adoption during regional engagements.

5. Support improved service delivery, new vaccine introductions, logistics and operations:

- Increase financial resourcing for service delivery (strategies to identify, reach, measure, monitor and advocate).
- Identify and scale up existing programmes to improve service delivery.
- Advocate for development and implementation of regional plans to optimize health workforce efficiency.
- Support new vaccine introductions (e.g. malaria, HPV, IPV2, rotavirus, TCV, MCV2).
- Build resilience using catch-up as an essential and ongoing part of immunization programming.
- Promote Reaching Every District/Reaching Every Community (RED/REC) approach, focusing on microplanning at subnational and district levels.

6. Support vaccine demand generation and focus on social behavioural drivers for immunization:

- Engage in sub-regional or multi-country communications and advocacy initiatives to reduce vaccine hesitancy.

7. Support local and regional vaccine manufacturing:

- Support implementation of Gavi regional vaccine manufacturing initiative by:
 - Informing antigen and product portfolio planning.
 - Adapting the Healthy Market Framework and Product Menu Criteria to facilitate listing and adoption of new regional products.
 - Providing investors in new manufacturing capacity with more predictability around eventual demand.

G2. Region of the Americas

2022 summary:

- **DTP3 coverage increased by 4%, from 86% to 90%, surpassing the 2019 baseline level (89%) (Figure 41).**
- **The numbers of zero-dose children fell by 557,000 to 1.36 million, fewer than the 1.61 million missed in baseline year 2019 (Figure 42).**
- **Coverage for all vaccines except MCV1 increased in 2022 compared to 2021.**

The policy for the revitalization of immunization as a public good for universal health, and the adaptation for the Region of the Americas of IA2030, is an ambitious proposal developed by the Pan-American Health Organization (PAHO) and the member countries of the region to strengthen vaccination programmes and ensure equitable access to vaccines in all countries. This agenda aims to eliminate and control vaccine-preventable diseases, reduce health inequities and protect vulnerable populations.

The framework builds on existing strategies and incorporates state-of-the-art tools, technologies and interventions. It also aims to:

- Use innovative communication approaches to strengthen social awareness and trust in vaccines and increase access to services.
- Improve epidemiological and vaccine safety surveillance capacity and incorporate geolocation and big data analysis into routine analyses.
- Build human resource capacity.
- Improve health research and apply it to guide programme implementation
- Strengthen governance, stewardship and financing of immunization programmes.

Progress towards region-specific objectives

In recent years, the Region of the Americas has seen a decrease in vaccination coverage across all antigens. For example, DTP3 coverage at the regional level fell from 94.4% in 2010 to 81% in 2021. In addition, challenges remain, such as heterogeneous vaccination coverage between and within countries. Furthermore, the COVID-19 pandemic has impacted immunization programmes, affecting the delivery and administration of vaccines due to refusal, doubts or lack of confidence in vaccination in general. In 2022, the downward trend in coverage for almost all antigens (except for the first dose of measles, rubella and mumps vaccine) was halted.

Among individual countries, **Brazil** has experienced progress in vaccination coverage for diseases such as measles and rubella. However, it has also faced challenges in remote areas and indigenous communities, where coverage rates are lower. **Mexico** has made significant progress in vaccination coverage against measles, rubella, polio, influenza and other preventable diseases. In addition, it has implemented mass vaccination campaigns in response to disease outbreaks.

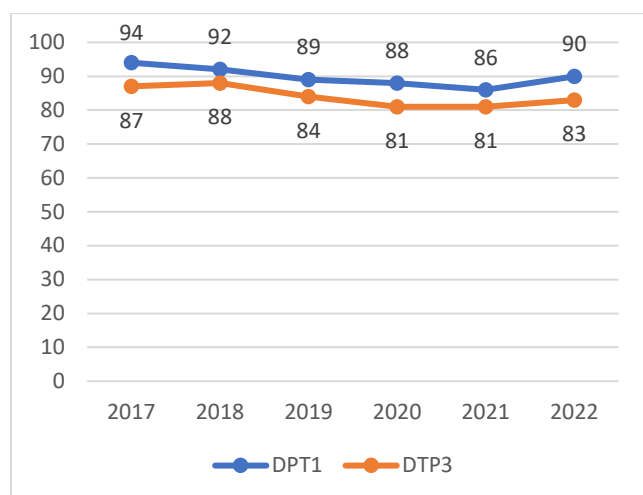


Figure 41: WUENIC coverage estimates for DTP1 and DTP3, 2018–2022.

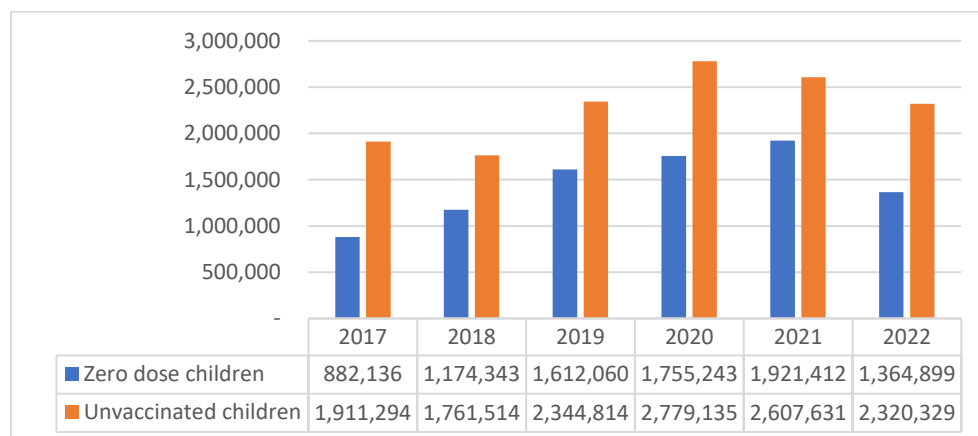


Figure 42: Number of zero-dose and under-vaccinated (not receiving DTP3) children 2017–2022 (based on WUENIC data).

Table 4. Regional vaccination coverage by antigen according to WUENIC estimates, by year

Years	2017	2018	2019	2020	2021	2022
15HPVC_F (HPV vaccine for females under 15 years of age)	56	56	59	62	64	66
15HPVC_M (HPV vaccine for males under 15 years of age)	13	18	23	26	30	33
DTP1	94	92	89	88	86	90
DTP3	87	88	84	81	81	83
IPV1	90	87	86	82	78	83
MCV1	88	91	87	85	85	84
MCV2	74	84	73	72	75	76
POL3 (poliovirus vaccine, dose 3)	87	87	86	80	80	82
ROTAC (rotavirus vaccine)	72	73	74	70	70	74

The main objectives of the 2030 Agenda for Immunization for the Region of the Americas are:

Achieve and maintain 95% vaccination coverage for all vaccines in the national immunization programme, reaching all age groups and communities

In 2022, the countries and territories of the Americas, by intensifying their efforts, have managed to halt the drop in coverage that the region has been experiencing since 2017:

- DTP1 has recovered to 90% versus 86% in 2021, while the third dose of this vaccine (DTP3) has recovered to 83% versus 81% in 2021.
- The countries of the Americas managed to reduce the number of zero-dose children to pre-pandemic levels (1.3 million). However, this figure remains high, leaving 1 in 10 children in this age group unprotected against diseases such as diphtheria, pertussis and tetanus.

Brazil remains the country with the highest absolute number of zero-dose children, accounting for 32% of zero-dose children in the region; one in five children under 1 year of age in Brazil are not protected. This year, the President of Brazil launched a national movement for the recovery of vaccination using the microplanning methodology developed by PAHO, and vaccination has since become a political priority. Municipal authorities have also created plans to recover high vaccination coverage.

After Brazil, Mexico has 135,000 zero-dose children, followed by Ecuador with 86,000. However, if the focus remains on absolute numbers, countries that have few children and low coverage may be left out of an intensified focus of support. In Brazil, even with 95% coverage, because of its very high number of births, the remaining 5% will still represent a very high absolute number.

Coverage of all other vaccines improved in 2022 compared to 2021, except for MCV1, which decreased from 85% to 84%. In contrast, MCV2 has increased from 72% in 2020 to 76% in 2022. Although about 2.3 million children did not complete their immunization schedule in 2022, this figure is the lowest since 2019.

Following significant efforts by countries, coverage of the first dose of inactivated poliovirus vaccine (IPV) has improved by 5%, from 78% in 2021 to 83% in 2022. In addition, coverage of the third dose of polio vaccine has increased from 80% in 2021 to 82% in 2022, also due to the implementation of bOPV in the 2022 national follow-up campaigns. This progress is especially important to keep the region polio-free given the recent vaccine-derived poliovirus (VDPV) events in the region.

Eliminate the transmission of vaccine-preventable diseases such as measles, rubella and polio

Acute flaccid paralysis (AFP) surveillance performance in the region has improved in 2022 compared with previous years. Surveillance sensitivity (AFP rate) had been below the target of 1 case per 100 000 children under 15 years of age since 2020. However, in 2022 the AFP rate was 1.33. In addition, the percentage of cases investigated within 48 hours was 92% in 2022, above the expected 80%. The percentage of cases with an adequate sample is 77%, which is still below the expected target, but shows an improvement compared to previous years. Among the high- and very high-risk countries, according to the Regional Certification Commission for the Polio Endgame in the Region of the Americas (RCC) classification for 2021, five countries (Argentina, Bolivia, Brazil, Panama and Venezuela) reported an AFP rate above the target, and Guatemala is very close to the expected target.

Measles and rubella surveillance performance in the Americas has improved in 2022 compared to 2021, when it reached its lowest level due to the impact of the COVID-19 pandemic. The annual rate of suspected measles and rubella cases was 1.41 in 2021 and 2.26 in 2022. Compliance with the annual rate at the country level improved slightly, and the number of countries with a rate of less than 1 case per 100,000 population was

reduced, from 11 in 2021 to six in 2022. Other surveillance indicators also showed improvements. For example, the percentage of cases investigated within 48 hours was 82% in 2022, above the expected 80%, and the percentage of cases with an adequate sample was 79%, which, although still below the expected target, shows an improvement over 2021.

The Regional Commission for Monitoring and Re-verification of Measles, Rubella and Congenital Rubella Syndrome Elimination continues to review annual country reports in order to reverify countries that meet the requirements of the Regional Framework for the Sustainability of Elimination. In 2022, the Second Annual Re-verification Meeting was held by the Commission, with Venezuela, Haiti and Brazil as endemic countries pending reverification.

Strengthen the infrastructure of the vaccine cold storage and distribution network

Efforts have been made to strengthen the cold chain for vaccine storage and distribution. PAHO collaborated with Member States to assess their cold chain operations to determine the additional capacity required to store and transport COVID-19 vaccines. PAHO worked with 30 countries to review and analyse the technical specifications to define the refrigeration equipment needs required. After the analysis of the situation of each country, PAHO gave priority to 30 countries to receive technical assistance, mainly with the acquisition of equipment to expand their capacities and strengthen the systems and operation of the cold chain. One of the main challenges identified in this process was the need for an updated inventory of cold chain equipment.

Pandemic response actions: Despite the challenges presented by the COVID-19 pandemic, strategies have been implemented to maintain essential vaccination services and ensure the availability of COVID-19 vaccines. Almost all countries have taken advantage of COVID-19 vaccination to co-administer seasonal influenza vaccine. The financial, material and logistical resources that supported COVID-19 vaccination have been used to support routine vaccination operations. In many cases, countries took advantage of COVID-19 vaccination operations to provide other vaccines to their populations.

Finally, Vaccination Week in the Americas offered opportunities for all population groups to receive their dose of COVID-19 vaccine at the same time as other vaccines in the national immunization programme.

Region-specific factors that may have affected immunization coverage or other key indicators

- **COVID-19 pandemic:** The COVID-19 pandemic has had a significant impact on immunization coverage in the region. Closures and restrictions imposed to control the spread of the virus have hindered access to health services, including vaccination.
- **Social and geographic inequalities:** The region is characterized by significant inequalities in access to healthcare and immunization. Vulnerable populations, such as indigenous communities, migrant populations and people living in remote areas, face barriers to accessing health and immunization services.
- **Lack of risk perception/negative impact:** Due to the success of vaccination programmes in eliminating disease transmission, these diseases are practically non-existent. This situation has contributed to a very low risk perception by the population for some of these diseases (e.g. polio, measles, rubella and congenital rubella syndrome). For other vaccines, such as influenza, there are still sectors of the population that doubt their effectiveness due to the lack of inclusion of circulating strains in those contained in the vaccines, or due to the myth that these vaccines should prevent all acute respiratory infection, including colds.

- **Resistance to vaccination:** Some countries in the region have experienced outbreaks of vaccine-preventable diseases due to vaccine reluctance and the spread of misinformation about vaccine safety and efficacy. The level of organization of anti-vaccine groups may have increased, especially after the COVID-19 pandemic.
- **Sustainable financing:** To achieve IA2030 goals, it is necessary to ensure sustainable financing of vaccination programmes and the procurement of new vaccines. However, advocacy for increased government investment in vaccines is still dominated by mortality and morbidity arguments, and does not sufficiently focus on benefits for different sectors of society or for a country's economic and educational sectors.
- **Surveillance and monitoring:** Epidemiological surveillance systems need to be strengthened to detect and respond rapidly to outbreaks of vaccine-preventable diseases.
- **COVID-19 vaccine hesitancy:** Measles–rubella and polio vaccination campaigns have had difficulty reaching the national target of 95% or more due to some parents' refusal to vaccinate children against COVID-19 and concerns that their children may be receiving this vaccine along with measles–rubella or polio vaccines.

Key activities carried out to support countries

- **Policy and strategy development:** National immunization policies and strategies have been developed to guide the implementation of effective and equitable immunization programmes. Plans include:
 - Strengthening routine immunization programmes and support the implementation of high-quality multi-antigen retrieval campaigns when necessary.
 - Strengthening epidemiological and laboratory surveillance operations in all countries and territories to detect emerging outbreaks and respond immediately to prevent further transmission and disease.
 - Strengthening the infrastructure of national immunization programmes, building on the large investments that countries have made during the rollout of COVID-19 vaccines in 2021 and 2022.
- **Capacity building:** PAHO has worked with countries to strengthen their immunization capacities by providing technical support and training to health professionals. PAHO has worked to provide countries with access to online courses on topics such as vaccinology or courses for immunization managers. Work has also been done to improve risk communication capabilities and modern communication tools. Finally, in the Caribbean, work continues with professional associations and scientific and medical schools to include immunization topics in the academic curriculum.
- **Improved monitoring of the performance of immunization programmes:** An agile and practical methodology was developed to monitor the performance of the 13 components of national immunization programmes (available in Spanish and English), as a first step for countries to self-assess their capacities and update or develop a short- and medium-term action plan to improve their situation.
- **Monitoring of post-vaccination adverse events:** PAHO has designed and implemented a regional surveillance system for adverse events supposedly attributed to vaccination (AEFI or ESAVI in Spanish) from July 2021, to which 17 countries in the region and 22 sentinel hospitals have adhered to monitor the safety of vaccination with COVID-19 vaccines. This system will transition to ESAVI surveillance for all vaccines between 2023 and 2024.
- **Keeping the region free of polio:** Technical guidance has been provided to all Member States, particularly very high-risk and high-risk polio countries. An analysis of the polio situation was presented in 2021, 2022 and 2023 to PAHO's Technical Advisory Group (TAG) for vaccine-

preventable diseases, leading to tailored recommendations. The WHO regional office also acts as the secretariat for the Regional Certification Commission (RCC), providing both overall and country-specific guidance, while urging and supporting Member States to strengthen vaccination efforts, surveillance capabilities, and readiness for potential polio events or outbreaks.

Progress in the development or implementation of a regional M&E framework and IA2030 operational model

Regional M&E framework: Progress has been made in the development of the Regional Immunization Action Plan 2030 (RIAP 2030), which includes a regional monitoring and evaluation framework with performance and programmatic indicators. This framework will allow systematic tracking of progress towards the goals and objectives of the agenda in each country and at the regional level.

G3. European Region

2022 summary:

- **DTP3 coverage in the region rose to 94%, almost returning to pre-pandemic levels (95%)**
- **MCV2 coverage also rose, to 91%, and is also almost back to pre-pandemic levels (92%).**
- **Five countries have achieved the region hepatitis B control target.**
- **Reported outbreaks have fallen by more than 99% since 2019, but reporting may have been disrupted by the COVID-19 pandemic.**

While the WHO European Region maintained its **polio-free status**, circulating vaccine-derived polioviruses (cVDPVs) continued to be detected in environmental samples and in cases of paralytic disease. Based on the reported data for 2021, the European Regional Commission for the Certification of Poliomyelitis Eradication identified several countries in the region as at either high or intermediate risk for the spread of polioviruses following the importation of wild poliovirus or the emergence of cVDPVs.

In 2021 and 2022, the verification process for **measles and rubella elimination** by the European Regional Verification Commission for Measles and Rubella Elimination was disrupted due to a lack of reports from the countries. Notification of measles and rubella cases also declined during 2020 and into 2022, partly because of suboptimal performance of national vaccine-preventable diseases (VPD) surveillance due to the COVID-19 pandemic. An increasing number of countries have reported declines in coverage with measles- and rubella-containing vaccine (MRCV) in 2022 compared to 2019, indicating an increased risk of outbreaks of these diseases in 2023 and beyond.

Five countries were validated in 2021 and 2022 as having achieved the regional **hepatitis B** control target, setting the path towards achieving regional hepatitis B elimination.

By the end of 2022, only four countries had achieved the global target of 90% coverage with **HPV vaccine** among girls 15 years of age.

While more than 1900 VPD outbreaks meeting pre-defined thresholds for outbreaks were detected in 36 countries in 2019, only 10 VPD outbreaks were reported in six countries in 2022. However, data reported during 2020 and up to 2022 should be treated with caution because of the effect of the COVID-19 pandemic on VPD surveillance and the impact of social and public health measures on the transmission of infectious diseases.

The number of countries with <90% of districts (third administrative level) with ≥95% DTP3 coverage decreased from 27 (55%) in 2019 to 23 (47%) in 2022.

Coverage with DTP3, MCV2, the final dose of HPV vaccine, and pneumococcal conjugate vaccine (PCV) provides an indication of the breadth of protection provided by vaccines in the national immunization schedule. Owing to the impact of the COVID-19 pandemic, there has been only a marginal change in the breadth of protection provided by these vaccines between 2019 and 2022.

Table 5: EIA2030 impact indicators, baseline, targets and 2022 progress from baseline

Impact Goal	Indicator	Baseline	2030 target	2022 progress from baseline
Goal 1: Disease control	Impact 1. Sustained polio-free status in the European Region.	All 53 Member States polio-free.	Polio-free status in the Region sustained	All 53 Member States maintained their polio-free status.
	Impact 2. Percentage of Member States that have achieved and sustained measles and rubella elimination.	30 Member States eliminated measles and 45 Member States eliminated rubella.	All 53 Member States have eliminated both measles and rubella.	33 (62%) and 48 (91%) eliminated measles and rubella respectively in 2021.
	Impact 3. Percentage of Member States that have achieved the regionally established hepatitis B control target	0 (0%)	80%	5 (9%) Member States have achieved the regional hepatitis B control target.
	Impact 4. Percentage of Member States that have achieved global HPV immunization target	1 (2%)	60%	4 (8%) Member States have achieved the HPV immunization target.
	Impact 5. Trend in number of reported VPD outbreaks	1924 VPD outbreaks reported	50% reduction in a 3-year trend	10 VPD outbreaks reported across all 53 Member States, corresponding to a 99.5% reduction compared to baseline.
Goal 2. Equity and strengthening of primary health care goal	Impact 6. Percentage of Member States with evidence of under-immunized populations at subnational levels	TBD	50% reduction compared to baseline	TBD
	Impact 7. Percentage of Member States that have achieved coverage target with vaccines included in national immunization schedules (DTP3, MCV2, HPVc, PCV3)	3 (6%)	60%	3 (6%) Member States have achieved the coverage targets for all four vaccines.

Region-specific factors affecting immunization coverage and other key indicators

Factors affecting immunization programme performance in the region ranged from overstretched healthcare systems and fatigue from the COVID-19 pandemic response to managing acute health emergencies, including multiple VPD outbreaks, natural disasters such as earthquakes in Türkiye, and the humanitarian crisis linked to the war in Ukraine.

Ongoing humanitarian and refugee crises in Ukraine and in the neighbouring countries, health system fatigue linked to the COVID-19 pandemic and reduced risk perception by the population have posed challenges to national immunization programmes, leading to declines in routine immunization coverage. For example, in Ukraine, the number of zero-dose children in 2022 almost doubled compared to the number in 2019, and now constitute a quarter of zero-dose children in the region (Table 6).

Moreover, unstable energy supplies significantly impacted vaccine stock management and maintenance of the cold chain. Accumulation of under-immunized or unimmunized children has increased the risk of VPD outbreaks, such as measles and diphtheria, although some countries show signs of recovery.

Table 6: Top 5 countries with the highest numbers of zero-dose children

2019			2022		
Country	Number	% of regional total	Country	Number	% of regional total
Russian Federation	44,446	21.1	Ukraine	72,071	23.8
Ukraine	38,697	18.4	Russian Federation	41,132	13.6
Uzbekistan	31,741	15.1	Romania	20,995	6.9
UK	21,204	10.1	UK	20,251	6.7
Germany	15,395	7.3	Kyrgyzstan	15,298	5.1

Key activities undertaken to support countries

- European Immunization Week:** Aligned to the World Immunization Week, the European Immunization Week (EIW) campaign on 23–29 April 2023 focused on timely routine vaccination and the need to catch-up on any vaccinations missed due to the COVID-19 pandemic, while continuing to emphasize the need for COVID-19 vaccination, especially among vulnerable groups.

EIW 2023 was promoted across traditional and digital media platforms. It was covered by news media in at least 29 of the 53 countries in the Region, bringing attention to the global decline in vaccination rates during the pandemic and the push for the Big Catch-Up to rebuild population-wide protection.

At the same time, targeted social media campaigns were launched by national health authorities, WHO, UNICEF, international partners, civil society organizations, and professional associations in at least 26 countries. The WHO European Region and UNICEF Europe and Central Region communications campaigns, launched on most major social media platforms, shared messages and videos that encouraged parent/caregiver conversations with a healthcare provider to address concerns about vaccination, focused attention on the rationale for national vaccination schedules, and highlighted the increased risk for measles outbreaks in 2023.

As a complement to these traditional and digital media campaigns, a wide range of outreach activities and field events were also organized at the country level to promote engagement with local communities, strengthen capacity in healthcare systems, and reach out to underserved populations.

- Joint European Union/WHO vaccination projects:** Significant progress has been made on the Vaccination Saves Lives projects supporting the deployment of COVID-19 vaccines and strengthening of routine vaccination systems in the Eastern Partnership countries, Western Balkan countries, and Central Asian Republics, co-funded by European Union and implemented by WHO/Europe¹⁸.

The projects' approach has been multifaceted to facilitate scale-up of COVID-19 vaccination, address the diverse vaccination barriers faced by individuals and communities, thereby preventing VPD outbreaks and contributing to regional health security. In addition to targeted technical assistance to

¹⁸ <https://www.who.int/europe/activities/partnering-with-the-european-union-to-support-deployment-of-covid-19-vaccines-and-vaccination>

ministries of health to deploy and scale-up COVID-19 vaccination, the projects have provided support related to critical health system infrastructure.

- **Outbreak responses:** Support was provided to control a cVDPV2 outbreak in Tajikistan, first detected in 2021. High-quality nOPV2 campaigns and other measures contained the outbreak, which was declared closed in April 2022¹⁹.
- **Hepatitis B control:** A working group of the European Technical Advisory Group of Experts on Immunization (ETAGE) is tasked with assessing the achievement of the region's hepatitis B control goal. Through to the end of 2022, five countries (Italy, the Netherlands, Georgia, the Republic of Moldova, and the UK) have been validated as having achieved the control target.

In early 2023, four additional countries (Belarus, Kyrgyzstan, Turkmenistan and Uzbekistan) were also validated to have achieved the regional target²⁰. These countries, which previously had high levels of hepatitis B, have demonstrated that implementation of hepatitis B vaccination can lead to significant reduction of chronic hepatitis among children and adolescents, thereby reducing levels of liver cancer caused by hepatitis B.

As more countries reach the regional targets set for hepatitis B control, an effort supported by WHO/Europe and other regional partners, this will bring the region closer to achieving the ultimate goal of eliminating viral hepatitis as a public health threat by 2030.

Progress made in development or implementation of a regional M&E framework and IA2030 operational model

An operational framework, which includes a regional M&EA cycle, is being finalized and planned for publication. The draft was presented and discussed with all Member States during sub-regional immunization programme managers meetings in 2022 and 2023.

The EIA2030 M&E framework includes a compendium of indicators. WHO/Europe is supporting Member States to develop their national M&E frameworks in line with the implementation of their National Immunization Plan and/or Strategy, in accordance with the regional indicators.

Key objectives and planned activities for the coming year

The following three key activities will be the main focus for the next couple of years:

- **COVID-19 vaccination for vulnerable populations and integration of COVID-19 vaccination into routine immunization**

A regional guideline on "Country considerations for integration of COVID-19 vaccination into immunization programmes" is at a late stage of development. Integration is underway in most countries in the region, and the regional guidance aims to enable a comprehensive approach to integration that considers all health-system components and outlines opportunities and challenges.

¹⁹ <https://www.who.int/europe/news/item/28-04-2022-comprehensive-outbreak-response-successfully-stops-spread-of-polio-in-tajikistan>

²⁰ <https://www.who.int/europe/news/item/24-04-2023-more-countries-reaching-hepatitis-b-control-targets-brings-the-who-european-region-closer-to-eliminating-viral-hepatitis-as-a-public-health-threat>

Several countries in the region have implemented co-administration and reporting for seasonal influenza and COVID-19 vaccines, including Azerbaijan, Kyrgyzstan, Kazakhstan and Denmark.

- **Catch up of missed cohorts and ensuring vaccine equity**

Guidance on “Operational considerations for planning and implementing catch-up vaccination in the WHO European Region” has been published and disseminated to Member States. This work will be supplemented with the upcoming regional programmatic considerations document on identifying, addressing and monitoring immunization inequities, particularly at sub-national levels. This will enable countries to effectively identify *who* are unvaccinated, *why* they are unvaccinated, *how* they can be reached by tailoring of programme strategies, and *whether* the interventions conducted worked. Immunization equity work will be scaled up in countries starting from 2024, with technical assistance provided from the regional level of WHO and UNICEF. In addition, programmatic efforts will be supported by a regional advocacy and communication strategy.

- **Life-course vaccination**

WHO/Europe will support countries to explore and strengthen a broad range of pathways, providers and non-conventional approaches for delivering immunization service (e.g. through pharmacies, private service providers) to improve uptake and promote equitable coverage, and to establish or update national policies and practices for catch-up vaccination, leveraging the life-course approach to immunization. This will include a focus on vaccines against measles–mumps–rubella, pertussis, HPV, herpes zoster and influenza.

Lessons learned from COVID-19 vaccination implementation could be leveraged to ensure national immunization programmes are resilient, able to maintain services during outbreaks and emergencies, and recover quickly if services are interrupted.

G4. Eastern Mediterranean Region

2022 summary

- **DTP3 coverage rose by 2% to 84% but remains below the 2019 baseline level of 85%.**
- **The numbers of zero-dose children fell by 0.2 million to 1.7 million.**
- **Conflict and insecurity in the region continue to affect progress – 60% of zero-dose children live in fragile and conflict-affected settings.**

Progress towards region-specific targets

DTP3 coverage in the region increased from 82% in 2021 to 84% in 2022, but remains below the 85% achieved in baseline year 2019. Similarly, the numbers of zero-dose children fell from 1.9 million in 2021 to 1.7 million. All the seven Gavi-eligible countries in the region have a plan for reducing the numbers of zero-dose children, following a regional workshop on this topic held in March 2023.

Four countries have been verified for measles and rubella elimination. Egypt was verified in November 2022, while Oman, Bahrain and Iran sustained their elimination status.

Hib vaccine has been introduced in all countries, PCV in all countries except Iran, Egypt, Syria, Jordan and Somalia, and rotavirus vaccination in all countries except Iran, Syria, Egypt, Oman, Tunisia and Somalia. In 2022 Lebanon introduced PCV and rotavirus vaccines, and Morocco and Saudi Arabia introduced HPV vaccination, while Qatar and Kuwait introduced HPV in 2023.

In 2022, countries in the region achieved 47% and 17% coverage for COVID-19 vaccination complete primary series and first booster doses, respectively. As of 31 July 2023, countries had increased these coverage figures to 51% and 19%, respectively. In all, 16 out of 22 countries have fully or partially integrated COVID-19 vaccination into national immunization programmes.

Inequity in access continues to be a major challenge in the region. More than 8 million children do not have access to PCV and rotavirus vaccine, and over 90% of adolescent girls do not have access to HPV vaccine. More than two-thirds of children do not receive any booster dose for diphtheria.

Despite many challenges, some countries achieved good progress in 2022. For example, Pakistan reduced the number of zero-dose children from 610,000 in 2021 to 430,000 in 2022, significantly contributing to the global reduction. Despite a difficult economic context, Lebanon was able to successfully introduce PCV and rotavirus vaccines, and Egypt was verified as having eliminated measles and rubella.

Region-specific factors that may have affected immunization coverage or other key indicators

Some parts of the region continue to be affected by **conflict and political instability**; 60% of zero-dose children live in countries in fragile and conflict-affected settings.

In addition, **immunization financing** is unpredictable and not secured in priority countries. Low-income countries are totally dependent on donor funding for vaccines and operations, and there is limited support for middle-income countries, which are experiencing economic stress that is affecting introduction of new vaccines.

Many countries are characterized by weak health system, lined to migration of experienced and skilled health workers, damaged service delivery infrastructure, and weak governance in conflict-affected countries.

Key activities undertaken to support countries

Regional training on documentation of measles/rubella was provided to four countries (Saudi Arabia, UAE, Qatar and Kuwait). In addition, a regional workshop was held in March 2023 to help the seven Gavi-eligible countries to develop and implement plans for reducing the numbers of zero-dose children and improve the equity to vaccination access. These countries were also supported in their development of Equity Accelerated Fund (EAF) proposals to Gavi.

Other training events have included two 4-day workshops in June 2023 for NITAG chairs and members. One workshop was for seven countries on roles and responsibilities and the other workshop for another seven different countries focused on “evidence to recommendations” (EtR). In addition, a regional workshop on life course immunization and integration was organized for 11 high- and middle-income countries, focusing on learning lessons from COVID-19 vaccination and development of national policies and schedules for life course immunization.

Lebanon, Djibouti and Yemen have been provided with support for development of their NISs. A training course to capacitate around 15 technical officers to be able to develop and support countries in National Immunization Strategy (NIS) development was organized in 2023

EMRO supported countries in responding to VPD outbreaks, including measles in Pakistan, Syria, Somalia, Afghanistan and Yemen and cholera in Pakistan, Syria, Lebanon and Somalia. A hands-on training workshop for laboratory staff in seven countries was organized to provide training on the diagnosis of diphtheria and pertussis.

Through regular Regional Working Groups (RWG) and Country Support Meetings, EMRO updated the country teams from all partners on new policies, strategies and guidance to countries on integration of COVID-19 vaccination into immunization programmes, the Big Catch Up initiative, and reaching more zero-dose children.

A detailed analysis of sub-national immunization coverage is shared quarterly with countries to inform their corrective actions.

Progress made in development or implementation of a regional M&E framework and IA2030 operational model

EMRO is working on a regional M&E framework. Two committees with representation from different partners and programme managers have been working on: (1) drafting the narrative of the framework; and (2) developing the appropriate regional indicators and their definitions.

The final documents will be submitted to the RITAG for endorsement and then presented to the Regional Committee in 2024.

Key objectives and planned activities for the coming year:

Priorities for the coming year include:

- Finalizing the IA2030 regional M&E framework and getting it endorsed.
- Supporting countries in the planning and implementation of Big Catch-Up activities to restore, sustain and improve routine immunization coverage, through monthly meetings of the RWG and through country missions and field staff. EMRO will be helping the Gavi-eligible countries better utilize funding through re-programming of available funds for the Big Catch Up.
- Supporting verification of measles and rubella elimination in seven countries.
- Following up with seven priority countries on zero-dose reduction through monthly follow-up calls, country missions and country staff.
- Supporting seven countries with a high burden of outbreaks to improve their response capacity, by conducting a regional simulation exercise workshop.
- Supporting middle-income countries by deployment of staff in their countries and support in mobilizing local and external resources, especially from Gavi for introducing new vaccines and strengthening NITAG capacity.
- Continuing to advocate for new vaccine introductions, especially for HPV, PCV and rotavirus vaccines.
- Improving the laboratory capacity of countries, particularly for diagnosis of bacterial pathogens (pertussis and diphtheria).

G5. South-East Asia Region

2022 summary

- Coverage of all priority vaccines returned to at least baseline levels.
- DTP3 coverage rose by 8% to 91% compared with 2021.
- The numbers of zero-dose children fell to 2.3 million but remain above 2019 baseline levels.
- Measles elimination has sustained in five countries
- Hepatitis B control has been sustained in four countries.

Progress towards region-specific targets

The years 2022 and 2023 have seen significant progress towards region-specific impact indicator goals and the strategic priority objective indicators compared to 2020 and 2021 (Table 7). The South-East Asian Region has recovered to 2019 levels or above for all priority vaccines recommended by WHO. The number of zero-dose children has fallen compared to 2021, although remains slightly higher than in 2019. DTP3, MCV2 and PCV3 coverage levels have recovered back to 2019 levels, although intercountry and subnational variations remain. Countries in the region have introduced 21 new and underutilized vaccines between 2020 and 2023, in addition to 91 new and underutilized vaccines that were introduced by 2019.

The region remained polio-free in 2022 and maintained its maternal and neonatal tetanus elimination status. Measles elimination was sustained in five countries, rubella elimination in two countries in 2022, and two more countries were verified to have eliminated rubella in 2023.

By June 2023, four out of eleven countries in the region had achieved the regional target of measles and rubella elimination by 2023 and one additional country had achieved and sustained measles elimination. Nevertheless, the region is off-track to achieve the target of measles and rubella elimination by 2023, and is thus in the process of resetting a new target goal. Hepatitis B control through immunization has been sustained in all four countries previously verified for hepatitis B control.

Table 7: Progress in achieving IA 2030/RVIP 2022-2026 Impact indicator targets

Impact goal	Objective	Global indicator	Regional specifics Regional baseline (year)	2022 Status	2026 regional target	2030 regional target
1. Leaving no one behind by increasing equitable access and use of new and existing vaccines	Leave no one behind.	1.1: Number of zero-dose children	1 999 441 (2019)	2 285 979	1 379 333	1 019 429
	Provide access to all vaccines.	1.2: Introduction of new or under-utilized vaccines in low- and middle-income countries	91 (2019)	91+ 21*	32	51
	Deliver across the life-course.	1.3: Vaccination coverage across the	3.1.1 DTP3: 91% (2019)	91%	94%	94%
			3.1.2 MCV2: 83% (2019)	85%	95%	95%
3.1.3 PCV3: 24% (2019)			58%	58%	91%	

		life-course (DTP3, MCV2, PCV3, HPV)	3.1.4 HPV: 2% (2019)	3%	48%	90%
	Contribute to PHC/UHC.	1.4: UHC Index of Service Coverage	61%	TBC	Improve	Improve
2. Pursuing vaccine-preventable disease elimination and control goals	Control, eliminate and eradicate VPDs.	2.1 Number and % of countries achieving endorsed regional or global VPD control, elimination and eradication targets	2.1.1 Number of countries sustaining polio eradication: 11(2021)	11	11	11
			2.1.2 Number of countries achieving measles and rubella elimination: 5 (Measles), 2 (Rubella) (2021)	5 (measles) 4 (rubella) as of June 2023	11 (measles) 11 (Rubella)	11
			2.1.3 Number of countries achieving MNTE 11 (2021)	11	11	11
			2.1.4 Number of countries achieving hepatitis B control 4 (2021)	4	7	11
3. Reducing overall mortality and morbidity from vaccine-preventable diseases for all across the life-course	Save lives.	3.1: Number of future deaths averted through immunization	919 556 ²¹ (2019)	934 793	TBD	1 123 026 (2030) 10 495 760 (2021–2030)
	Reduce VPD outbreaks.	3.2: Number of large or disruptive VPD outbreaks ²	Measles: 1.66 (mean number from 2018–2020)	1.00 (2020-2022)	1.00 (Declining trend)	0 (declining trend)
			Vaccine-derived polio myelitis: 0.66 (mean number from 2018–2020)	0.33 (2020-2022)	0 (Declining trend)	0 (declining trend)

*HPV-1; PCV3-3; COVID-19:10, IPV2-2, Rota-4, TCV-1

Four countries from the region (India, Indonesia, Myanmar, and DPR Korea) were on IA2030's 20 priority countries list, those with the highest number of zero-dose children in 2021. Although they continue to appear in the top 20 priority country list in 2022, India moved from number 1 position to number 3, Indonesia from third position to seventh, and Myanmar from tenth position to 19th position.

The progress in India, Indonesia and Myanmar can be attributed to intensive multi-antigen catch-up activities. Due to continued vaccine shortages caused by pandemic-related border closures, DPR Korea moved from 18th position to 16th position, although available vaccines were used in catch-up campaigns. National vaccine stockouts in 2021 and 2022 had led to no vaccination at all for some antigens. Following vaccine deliveries in November 2022, the country conducted catch-up immunization in March 2023 targeting 2022 and 2021 birth cohorts in a strategic approach, as supplies were not sufficient for all missed doses and a certain percentage was allocated for 2023 routine immunization.

The region experienced a circulating vaccine-derived poliovirus (cVDPV) outbreak in 2022, which was well managed. A number of measles outbreaks have occurred, with those in three countries (India, Indonesia and Maldives) qualifying as large and destructive outbreaks. Countries have responded appropriately to these outbreaks. Of particular note is the introduction of an immunization response to outbreaks in India which, prior to 2022, did not have immunization responses to a measles outbreak in its guidelines.

Country specific progress and actions have been outlined in the regional advisory body meetings conducted in 2022 (SEAR-ITAG²², SEA-RVC²³, SEA_RCCPE meeting reports²⁴).

In addition to COVID 19 vaccines, 11 new and underutilized vaccines were introduced in the countries of the region. As a result, breadth of protection in the region has increased from 74% in 2019 to 79% in 2022. The breadth of protection of India has increased from 75% (2019) to 84% (2022) and in Thailand has increased from 66% in 2019 to 79% in 2022.

Region-specific factors that may have affected immunization coverage or other key indicators

All member countries have keenly tracked improving routine immunization coverage from the latter half of 2021, with national political leadership supporting and monitoring progress. National programmes have closely monitored progress and supported sub-national levels.

Countries in the region generally have an adequate health workforce, except in some hard-to-reach areas. Health workers mobilized for COVID-19 responses have resumed their routine work in primary healthcare, including immunization.

Some of the resources received for COVID-19 response have been used to improve cold chain capacity and electronic data management in countries.

Since the onset of the COVID-19 pandemic, WHO and UNICEF, together with other partners on the Regional Working Group for Immunization, focused on catching up children who missed immunization and monitored immunization data from countries monthly. Regional ITAG meetings in 2021 and 2022 closely reviewed the status of each country through their annual reports and made country-specific recommendations for all goals related to the Regional Vaccine Implementation Plan 2022–2026.

Based on these inputs, all countries have developed plans for restoration and recovery, new vaccine introductions, and measles and rubella elimination. WHO and UNICEF country teams and Gavi supported this work.

Eight face-to-face regional meetings have been held on a range of key topics since the last ITAG meeting in August 2022. These meetings/workshops were attended by representatives of national immunization programmes, NITAGs, national regulatory authorities, ITAG members, partners from global, regional and country levels. The meetings provided an opportunity to assess progress in different technical areas, exchange learn across countries, and inform partners about country needs. Partners supported in following up of recommendations of these meetings.

²² 13th SEAR-ITAG meeting report <https://apps.who.int/iris/handle/10665/364534>

²³ 8th SEA-RVC meeting report <https://apps.who.int/iris/handle/10665/370787>

²⁴ 15th SEA RCCPE meeting report <https://apps.who.int/iris/handle/10665/364721>

The Regional Working Group reviewed the progress of countries in a face-to-face meeting in November 2022 and additional support needed by countries was identified and provided. For priority countries such as India, Indonesia, Bangladesh, Myanmar, Nepal and Timor Leste, WHO-supported staff at subnational levels support sub-national immunization and VPD surveillance activities.

Key activities undertaken to support countries

A regional workshop was held in June 2023 to provide a platform for interactive capacity building on strengthening and sustaining routine immunization, including recovery from pandemic-related impacts. Outcomes of the workshop and support requirements identified will be reported to the 2023 regional ITAG meeting. This information will also help to coordinate partner efforts in critical areas, including the mobilization of human resources in areas with missed children.

To assess further progress in hepatitis B control, nationally representative sero-surveys are being organized in two countries. Outcomes will be reviewed by the regional expert panel to verify if the control goal has been achieved.

An online course for outbreak response for measles and rubella was launched in 2022 and has been accessed by more than 4500 participants across the region. Readiness assessment for outbreak response was conducted in priority countries. Outbreak response for measles, rubella and diphtheria have been regularly supported by WHO country offices and partners in all the priority countries.

Similarly, a regional review of surveillance for priority VPDs has been conducted and country-specific action plans developed. WHO regional and country offices are providing support to implement those action plans. Regional VPD surveillance guidelines have also been updated and are due to be released in October 2023.

Considering the importance of cross-border collaboration for immunization and surveillance, following consultation with Member States, a regional framework for cross-border collaboration for priority VPDs has been developed and implementation of the actions taken by Member States is being monitored. A simulation exercise on managing cross-border outbreak of measles and rubella was conducted for all Member States in September 2022.

An independent review commissioned to assess progress towards measles and rubella elimination concluded that the region is off-track to achieve the 2023 milestone. A regional consultation with Member States, experts and partners was organized in March 2023 to propose a revised target date for elimination. After considering the current momentum across the region for measles and rubella elimination, current strengths and enablers, the results of a modelling exercise supported by the Vaccine Impact Modelling Consortium, and the impact of the COVID-19 pandemic, it proposed 2026 as a feasible target date for elimination of measles and rubella in the region.

During the regional consultation meeting in March 2023, Member States also deliberated on a draft Regional Strategic Plan for Measles and Rubella Elimination and Sustainment in the South-East Asia Region: 2024–2028. The strategic plan retains the five proven strategic objectives included in the Strategic Plan for Measles and Rubella Elimination in WHO South-East Asia Region 2020–2024 and provides links to the seven strategic priorities outlined in the Strategic Framework for the South-East Asia Regional Vaccine Action Plan 2022–2030, which is aligned with the global IA2030 strategy²⁵.

²⁵ Regional consultation meeting report <https://apps.who.int/iris/handle/10665/368018>

The region's measles/rubella laboratory network now comprises 58 laboratories, and all Member States have capacities for providing laboratory confirmation of suspected measles and rubella cases by both serological and molecular methods. In addition, India has developed a well-functioning diphtheria/pertussis laboratory network to support VPD surveillance in the country.

In November 2022, a cVDPV2 outbreak was reported in Indonesia. The cVDPV2 was isolated from stool specimens of four children with acute flaccid paralysis (AFP) in Aceh and West Java provinces. The most recent case has date of onset of 16 February 2023. WHO, along with other partners, supported the country in outbreak response by rapidly meeting readiness requirements for nOPV2 and in conducting two rounds of high-quality mass vaccination campaigns in three provinces, reaching more than 6 million children in each round. WHO and partner agencies are now supporting the country in strengthening surveillance and routine immunization.

Progress made in development or implementation of a regional M&E framework and IA2030 operational model

In 2021, the WHO Regional Committee for South-East Asia endorsed the Strategic Framework for South-East Asia Regional Vaccine Action Plan 2022–2030 (Regional Strategic Framework). The plan was developed collaboratively with countries and immunization stakeholders. It adapts the global IA 2030 strategy according to regional context and lays out the specific impact goals for the region.

The Regional Vaccine Implementation Plan (RVIP) 2022–2026 complements the Regional Strategic Framework by providing details on how the Framework will be implemented within countries and at the regional level. It includes well-defined monitoring and evaluation indicators, and country-specific targets for 2026 and 2030. These indicators will be tracked regularly at the regional level.

Overall, the region is monitoring 23 indicators in strategic priority areas, using WHO/UNICEF JRF, yearly NIP/NITAG reporting form to the ITAG and monthly reporting of VPD data to monitor these indicators.

Key objectives and planned activities for the coming year

The region will continue to follow the impact goals and strategic priority area objectives of RVIP 2022–2026 in 2023. Specific activities will include:

- Further support for restoration and recovery of routine immunization and VPD surveillance for different countries:
 - DPR Korea: Support to ship the vaccines to the country.
 - Indonesia: Technical support for capacity-building of existing health workforce, promoting monitoring, evaluation and action cycles, subnational technical support from partners.
 - Myanmar: Vaccines for catch-up immunization activities, technical support, engaging country staff for technical work and knowledge-sharing.
 - Timor Leste: Continuous support for capacity-building of health workforce and monitoring coverage.
- Continuous information to countries about necessity of providing primary and booster doses of COVID-19 vaccines to high-risk populations and encouraging NITAGs to advise on continuation of COVID-19 vaccination.
- Support for planned catch-up vaccination activities in DPR Korea, India, Indonesia, Myanmar, Nepal, Thailand and Timor Leste according to country context.

- Country-wide mapping of the health workforce for immunization and planning capacity-building accordingly
- Using VPD surveillance data, particularly on VPD outbreaks, to conduct catch-up immunization activities in missed communities.
- Conducting risk assessment for polio, maternal and neonatal tetanus, and measles and rubella to identify high-risk districts, and developing plans to ensure activities to sustain polio-free status and maternal and neonatal tetanus elimination status, and to accelerate progress toward measles and rubella elimination.
- Gender assessment using the WHO Gender Assessment Tool at a national level in selected countries to ensure gender-responsive immunization programmes.
- Technical support to conduct measles/rubella catch-up activities, intensification of routine immunization and supplementary immunization activities to close immunity gaps for measles and rubella in priority countries (Bangladesh, India, Indonesia, Myanmar, Nepal and Thailand).
- Readiness assessment for outbreak response will be reviewed at national and subnational levels in endemic countries for measles and rubella.
- Technical support will be provided to Member States to grant marketing authorization to new licensed vaccine manufacturers using bilateral and multilateral reliance mechanism, cutting vaccine introduction and deployment times.
- Vaccine manufacturers will be encouraged to prepare risk-based pharmacovigilance plans in coordination with national regulatory authorities. The implementation of these plans will be followed up with both manufacturers and regulatory authorities.
- Member States will be encouraged to populate the genetic database of measles and rubella circulating genotypes to generate evidence relating to verification of measles rubella elimination in their respective countries.

G6. Western Pacific Region

2022 summary

- **DTP3 coverage rose to 93.6% in 2022 from 90.8% in 2021 (94.3% in baseline year 2019).**
- **The numbers of zero-dose children fell below 2019 baseline levels.**
- **PCV3 coverage in 2022 was almost 10% higher than in baseline year 2019.**
- **HPV vaccine coverage recovered markedly in 2022 (from 15% to 31.6%), but remains significantly lower than in baseline year 2019 (48.6%).**

1. Progress towards regional goal and targets

1-1. Implementation of Regional Strategic Framework for VPDs and Immunization in the Western Pacific 2021-2030²⁶

Most countries and areas in the Western Pacific Region have recovered from the setbacks caused by the COVID-19 pandemic. In 2022, the region reached 93.6% DTP3 coverage, compared with 94.3% in 2019. MVC2 coverage reached 90.4% in 2022, an increase from last year's 89.5% although it has not yet returned to the level seen in 2019. PCV3 has already surpassed the 2019 coverage levels (81.6% in 2022, 71.9% in 2019).

Countries and areas continue to maintain quality laboratory services and have leveraged COVID-19 investments to expand the scope of testing by incorporating the molecular detection of vaccine-preventable diseases (VPDs). Laboratory capacity for measles/rubella is available in all non-Pacific Island countries and some Pacific countries, while laboratory confirmation of poliovirus is available in 11 non-Pacific Island countries and all countries have access to regional and global polio specialized laboratory for referral of samples for testing. All countries/areas have access to laboratory capacity to test for at least one bacterial VPD.

Countries and areas have integrated disease surveillance systems that vary in the degree to which case-based surveillance systems for VPDs are incorporated into them or function as separate, parallel systems. Most countries also have national notifiable disease reporting from health facilities.

The region has the highest COVID-19 vaccination coverage among all WHO regions, with 88% of its population vaccinated with a primary series and 57% with a first booster dose. COVID-19 investments were utilized to improve health systems, and tailored strategies targeting priority populations were adapted to deliver vaccination throughout the life-course. See Tables 8 and 9 for a summary of progress against key indicators.

²⁶ [Regional Strategic Framework for Vaccine-Preventable Diseases and Immunization in the Western Pacific 2021-2030](#)

Table 9: Progress in the Western Pacific Region with respect to IA2030 impact goal indicators and targets

IA2030 Impact Goal Indicator		M&E Indicators for the Western Pacific Region		Target	2019	2020	2021	2022
1.2	Number and % of countries achieving endorsed regional or global VPD control, elimination and eradication targets	Countries/areas	certified free from transmission of poliovirus, including VDPV	100%	100%	100%	100%	100%
			verified for measles elimination	100%	52.9%	52.9%	47.1%	47.1%
			verified for rubella elimination	100%	29.4%	29.4%	35.3%	41.2%
			that achieved MNT elimination	100%	97.2%	97.2%	97.2%	97.2%
2.1	Number of zero dose children	Reduction of zero-dose children since 2019 (%)	50%	-	15.7%	-45.4%	2.1%	
2.2	Introduction of new or underutilized vaccines in low and middle income countries	No. of NUV introductions in LMIC since 2020	41 (100%)	-	-	6 (14.6%)	8 (19.5%)	
3.1	Vaccination coverage across the life course (DTP3, MCV2, PCV3, HPVc)	Regional immunization coverage	DTP3	95%	94.3%	94.9%	90.8%	93.6%
			MCV2	95%	92.8%	93.0%	89.5%	90.4%
			PCV3	90%	71.9%	80.9%	70.5%	81.6%
			HPV	90%	48.6%	33.0%	15.0%	31.6%

Polio-free certification and MNT elimination uses 36 as denominator (including each individual Pacific Island countries, excluding Pitcairn Islands).

Measles and rubella elimination uses 17 as denominator (Pacific Island countries are verified as one block).

Numbers of zero-dose children are calculated as the difference between the number of surviving infants and the number of children vaccinated with DTP1; a negative value means that the numbers of zero-dose children have increased.

New and underutilized vaccines include: Hib, HPV, JE, PCV and rotavirus vaccines. Number of remaining introductions as of 2020 among low- and middle-income countries was 41.

Regional coverage computed as weighted average using total population of reporting countries, with the following sources of data (in order of priority): (a) official country estimates, (b) national administrative coverage, (c) WHO/UNICEF estimates of national immunization coverage.

Table 10. Progress in implementation of RSF strategies with reference to IA2030 indicators and targets

WP RSF 2021-2030 Priority Strategies		M&E Indicators for the Western Pacific Region		Target	2019	2020	2021	2022
1.1	Leaving no one behind in the childhood immunization	Reduction of zero-dose children since 2019 (%)		50%	-	15.7%	-45.4%	2.1%
1.2	Expanding immunization services along the life course	Countries/areas with ≥ 3 vaccines targeting population beyond the first year of life		100%	94.4%	88.9%	88.9%	94.4%
1.3	Closing immunity gaps through tailor-made immunization strategies	Countries/areas with DTP1-DTP3 dropout ≤ 5%		100%	55.6%	50.0%	50.0%	50.0%
		AFP cases with ≥ 3 doses of OPV/IPV (%)		100%	87.8%	89.0%	90.8%	85.8%
1.4	Ensuring vaccine security in all countries and areas in the Region	Countries/areas with	no national level stock out of DTP or MCV	100%	66.7%	58.3%	66.7%	61.1%
1.6	Ensuring vaccine safety and safe immunization		at least 1 serious AEFI case per 100,000 population	100%	2.8%	5.6%	11.1%	8.3%
1.8	Securing sustainable domestic financing for immunization		increasing/stable government expenditure in immunization	100%	27.8%	13.9%	8.3%	11.1%
1.9	Strengthening governance and programme management		functional NITAG	100%	25.0%	19.4%	22.2%	27.8%
2.1	Enhancing strategic use of epidemiologic intelligence through optimized and integrated VPD surveillance systems	Countries/areas with	non-measles discard rate ≥ 2 per 100,000 population	100%	58.8%	41.2%	35.3%	35.3%
			non-polio AFP rate ≥ 1 per 100,000 population under-15	100%	76.5%	76.5%	52.9%	58.8%
			access to laboratory capacity to test for at least one bacterial VPD	100%	100%	100%	100%	100%
2.2	Ensuring prompt detection, confirmation and characterization of pathogens through integrated VPD	Measles laboratory results reported ≤ 4 days of specimen receipt (%)		80%	72.2%	90.8%	93.4%	97.4%
		Polio laboratory results (AFP and contacts) reported ≤ 14 days of specimen receipt (%)		80%	96.4%	96.0%	97.0%	97.1%
3.1	Ensuring preparedness for and response to events, outbreaks or the resurgence of VPDs under the targets for control, accelerated control, elimination or eradication	Countries/areas with	a plan for the detection of and response to imported WPV or cVDPV updated in the last 3 years	100%	58.3%	61.1%	55.6%	66.7%
			a measles outbreak preparedness and response plan developed or updated in the last 3 years	100%	47.1%	52.9%	52.9%	35.3%

'Functional NITAG' is defined as having satisfied all of the following requirements: with legal basis, terms of reference, ≥ 5 areas of expertise, ≥ 1 meeting per year with agenda and background documents, and disclosure of conflict of interest.

All indicators use 36 as denominator (excluding Pitcairn Islands), except for the following which all use 17 as denominator (Pacific Island countries considered as one block): (a) non-measles discard rate, (b) non-polio AFP rate, (c) measles outbreak preparedness and response plan.

1-2. COVID-19 vaccination response and its integration into regular immunization programme

28 out of 37 countries and areas in the region have achieved the global target of vaccinating at least 70% of entire population, and 21 out of 37 achieved the regional target of 80% coverage. 94.6% of health workers and 84.4% of older adults, respectively, have received a primary series.

Some countries and areas have already taken steps to integrate COVID-19 vaccination with other immunization programmes (e.g. influenza, TT, HPV and PCV) and primary healthcare (e.g. nutrition, health education, and reproductive and maternal health services).

1-3. Polio eradication

The Western Pacific Region remained free of indigenous and imported poliovirus transmission, with the apparent absence of circulating vaccine-derived poliovirus (cVDPV) transmission.

Most Member States maintained >90% coverage with three doses of polio vaccine in routine immunization at the national level and achieved key acute flaccid paralysis (AFP) surveillance indicators at the required benchmark levels during the COVID-19 pandemic. Environmental surveillance was used successfully as a supplement to AFP surveillance to monitor circulation of poliovirus that may not be captured by AFP surveillance.

1-4. Measles and rubella elimination

As of September 2022, among 14 countries, two areas and one sub-region (21 Pacific Island countries and areas are considered as one block):

- Eight have been verified to have sustained measles elimination (Australia, Brunei Darussalam, Hong Kong SAR (China), Japan, Macao SAR (China), New Zealand, Republic of Korea and Singapore).
- Seven have been verified to have sustained rubella elimination (Australia, Brunei Darussalam, Hong Kong SAR (China), Macao SAR (China), New Zealand, Republic of Korea and Singapore). Latest to be verified is Singapore in 2022.

Mongolia and the Pacific sub-region aim to achieve verification of measles and rubella elimination by 2025. China continues to make significant progress towards measles elimination. Since Q2 of 2020, no large-scale importation-related outbreaks or resurgence of endemic measles and rubella virus transmission have been observed.

The Region made progress towards achieving the “Operational Targets by 2020” that were set by the Regional Strategy and Plan of Action for MR elimination in the Western Pacific Region in 2017; and new “Operational Targets by 2025” were endorsed by the regional Technical Advisory Group (TAG) in June 2023.

1-5. Maternal and neonatal elimination

Five countries have been validated as having achieved maternal and neonatal tetanus (MNT) elimination (Viet Nam in 2005, China in 2012, Lao PDR in 2013, Cambodia in 2015 and Philippines in 2017). As of 2023, only Papua New Guinea has not achieved MNT elimination.

Papua New Guinea has made progress with tetanus toxoid supplementary immunization activities (SIAs) conducted in three high-risk provinces in 2018. The country has also initiated a district-level risk analysis in 2022 to improve the availability and quality of data to monitor programmatic progress and prepare for eventual validation of MNT elimination and for preparing for Td SIAs.

1-6. Accelerated control of hepatitis B

A total of 21 countries and areas in the region²⁷ have been verified for achieving the regional target of chronic hepatitis B infection <1% among 5-year-old children; out of these 21, nine countries²⁸ have already achieved the 2030 global target of <0.1%.

²⁷ American Samoa, Australia, Brunei Darussalam, Cambodia, China, Cook Islands, the Federated States of Micronesia, French Polynesia, Guam, Hong Kong SAR (China), Macao SAR (China), Malaysia, Mongolia, New Zealand, Niue, the Commonwealth of the Northern Mariana Islands, Palau, the Republic of Korea, Singapore, Tokelau and Tonga.

²⁸ Cook Islands, Fiji, French Polynesia, Guam, Macao SAR (China), Niue, the Commonwealth of Northern Mariana Islands, Palau and Tokelau.

Five countries and areas²⁹ have already achieved the regional target of <1% although they have not yet been verified.

1-7. Prevention of and preparedness for diphtheria outbreaks

DTP3 coverage in the region overall has remained high (ranging from 92% to 97% from 2011 to 2018 and from 91% to 95% from 2019 to 2022). The region has established and maintained a regional stockpile of diphtheria antitoxin since June 2020. It has also developed a Regional Field Guide for Preparedness and Response to Diphtheria in the Western Pacific Region.

2. Issues and challenges

2-1. Immunization coverage/immunity gaps

In 2021, essential immunization services were disrupted, resulting in 1.6 million children in the region missing at least one essential vaccine; among these, almost 1.5 million children received no vaccines at all. This led to a heightened risk of VPD outbreaks in several countries due to the accumulation of a susceptible population. Immunity gaps remain among adolescents and adults in several countries (e.g. against measles in China, and against rubella in the Philippines).

Additional challenges include low tetanus toxoid coverage at the subnational level in some countries that were already validated to have achieved MNT elimination. In addition, in Papua New Guinea and the Philippines, DTP3 coverage has been consistently below 50% and 57%, respectively, since 2018, and has declined significantly during the COVID-19 pandemic. Lao PDR, Papua New Guinea and the Philippines have reported ≤80% coverage for Polio3 during 2019^a2022.

Delays have also been experienced in the introduction of new vaccines, including HPV vaccine and the second dose of inactivated polio vaccine.

2-2. Surveillance

There is weak collaboration between epidemiologic and laboratory surveillance in many countries. In addition, surveillance systems have not yet recovered from COVID-19 disruptions and may not be capturing all VPD cases. Gaps in AFP surveillance at subnational levels persist and have widened in several countries.

2-3. Laboratory capacity

Several countries have insufficient capacity for adequate investigation and specimen collection for laboratory confirmation of measles/rubella. Congenital rubella syndrome (CRS) surveillance has not been established in several countries, resulting in an inability to estimate the burden of this condition.

3. Key activities undertaken to support countries 2022-2023

3-1. COVID-19 vaccination integration into regular immunization programmes

The Western Pacific Regional Road Map for COVID-19 Vaccination Response 2022–2023³⁰ was developed to provide guidance on accelerating vaccination of high-priority groups and integration of COVID-19 into routine immunization and primary health care, wherever feasible.

²⁹ Fiji, Japan, the Philippines, Samoa and Wallis and Futuna.

³⁰ [Western Pacific Regional Road Map for COVID-19 Vaccination Response 2022-2023](#).

In addition, countries were supported to: (a) ensure access to COVID-19 vaccines including variant-containing vaccines; (b) access and utilize tools on integrating COVID-19 vaccination into immunization programmes and primary healthcare; and (c) enhance vaccine safety surveillance systems.

3-2. Closing immunity gaps and prevention of VPD outbreaks (e.g. cVDPV, measles, rubella, etc.)

Several countries have undertaken activities to close immunity gaps. The Philippines and Papua New Guinea conducted MR/bOPV SIAs (with vit A supplementation) in 2023 and Mongolia conducted an MMR SIA in 2023. China held sub-national immunization days in 18 provinces using bOPV and IPV in 2021–2022. Cambodia conducted several rounds of catch-up vaccination with OPV and IPV in 2021–2022.

3-3. Accelerated implementation of the Regional Strategic Framework for VPDs and Immunization in the Western Pacific 2021–2030

An integrated VPD surveillance system (IVSS) is under development to improve interoperability and integration of immunization data.

In addition, a roadmap for “Labshot 2030” is under development, which aims to describe how to achieve the goals of Strategic Objective 2 of the Regional Strategic Framework for Vaccine-Preventable Diseases and Immunization in the Western Pacific 2021–2030.

4. Key objectives and planned activities 2023–2024

4-1. COVID-19 vaccination integration into regular immunization programme

Countries will continue to receive support in implementing strategies proposed in the Western Pacific Regional Road Map for COVID-19 Vaccination Response 2022–2023. Countries will also continue to be supported in ensuring access to COVID-19 vaccines and in integrating COVID-19 vaccination into immunization programmes and PHC, wherever feasible.

4-2. Closing immunity gaps and prevention of VPD outbreaks (e.g. cVDPV, measles, rubella, etc.)

Countries are planning multiple activities for 2023 and 2024. For example, Lao PDR, Malaysia and Cambodia have MR SIAs planned for 2024. Vanuatu plans to introduce the second dose of MRCV in Q4 2023/2024, while OPV using countries will be introducing the second dose of IPV into national immunization schedule.

Countries will continue to receive support to ensure access to vaccines in their national immunization programmes, conduct SIAs as needed, and introduce new and underutilized vaccines, as appropriate.

4-3. Accelerated implementation of Regional Strategic Framework for VPDs and Immunization in the Western Pacific 2021–2030

Countries will continue to be provided with support in a range of areas, including:

- Verifying measles and rubella elimination.
- Conducting MR, bOPV SIAs and other strategies to close immunity gaps, as needed.
- Assessing and addressing root causes of suboptimal vaccination coverage.
- Conducting EPI reviews and developing/updating national VDP plans and strategies, as needed, to accelerate or sustain disease elimination.
- Strengthening VDP surveillance including vaccine safety surveillance.
- Strengthening national capacity to prepare and respond to VPD outbreaks.
- Maintaining high-quality, WHO-accredited VPD laboratories; in Pacific Island countries, developing their national laboratory capacity and capability in preparation for the introduction of measles IgM rapid diagnostic tests.

The following resources will be developed/finalized:

- Electronic integrated VPD surveillance system (IVSS), including pilot-testing in selected countries.
- Regional M&E framework to monitor progress against the strategies outlined in the Regional Strategic Framework for VPDs and Immunization in the WP 2021–2030.
- Regional vision and strategy for VPD surveillance in the Western Pacific for review and endorsement by TAG in June 2024.
- Roadmap for Labshot 2030 for review and endorsement by TAG in June 2024.

5. Development of a regional M&E framework

IA2030 key areas of focus and strategies outlined in the Regional Strategic Framework for VPDs and Immunization in the WP 2021–2030 (RSF) have been mapped to identify common goals and targets (Q1 2023).

IA2030 indicators and targets are being adapted as provisional WPR M&E framework indicators for 10 (out of 18) strategies outlined in the RSF.

In coordination with WHO country offices, M&E framework indicators for all 18 strategies of the RSF will be developed, as well as regional targets from disease-specific programmes, such as measles, rubella and polio (Q4 2023/Q1 2024).

H. Working Group activities

IA2030 Working Groups have been carrying out a range of activities linked to recommendations in the 2022 Technical Progress Report and other important issues within their areas of technical focus.

Working Group for strategic priority 1: Immunization programmes for primary healthcare and universal health coverage

- **Development and launch of first edition of Immunization for Primary Health Care: A Framework for Action:** After consultation with multiple stakeholders, the SP1 Working Group developed [Immunization for Primary Health Care: A Framework for Action](https://www.immunizationagenda2030.org/strategic-priorities/immunization-programmes-for-primary-health-care-universal-health-coverage)³¹ to help programme managers, other immunization stakeholders, and primary healthcare (PHC) professionals to better understand the role and relevance of immunization in strengthening PHC programmes and PHC programmes in strengthening immunization. The Framework for Action provides examples of good practices from a range of countries and practical actions that immunization and PHC professionals at all levels of the health system can take and adapt to their local contexts and needs. This is also being shared widely such as via the IA2030 website, at ESA-EPI managers meetings, via the Global Action Plan for Healthy Lives and Well-being for All (SDG3 GAP) platform, through WHO's Primary Health Care newsletter (SDG3 GAP), and sharing with WHO regional and country offices. Gavi has included it in its technical resources to countries and has been shared with USAID missions. The SP1 WG continues to seek out additional platforms for dissemination.
- On Universal Health Coverage Day in December 2022, in partnership with The Geneva Learning Foundation (TGLF), Immunization for Primary Health Care: A Framework for Action was launched at a webinar attended by more than 500 people from over 70 countries. It has been viewed during and following the live event by more than 2000 individuals. Following the webinar, the Framework for Action has received 17,393 page views.
- As part of integrating into the NIS process, the Framework for Action was shared during two NIS regional workshops in Amman and Dakar, reaching country policymakers and partners in the regions. A webinar for NIS stakeholders is planned to further socialize the Framework for Action as a key resource for NIS.
- Following the launch, the WG is monitoring its use and feedback from users. TGLF gathered feedback to understand how webinar participants have used the Framework for Action. A deeper analysis of survey responses is planned by the WG, to identify potential case studies and ways to improve the Framework.
- **Cross-sector partnership and advocacy for human resources for health to achieve UHC and PHC:** Following presentations from a range of experts on human resources for health, the Working Group has advocated for and promotes this area by framing human resources for health as economic investments and continues to promote cross-sectoral partnership as key to addressing this issue. As part of the WG advocacy activities, an opinion piece is being written to spotlight challenges, potential solutions and innovations around human resources for health. This will be published around the time of the Universal Health Coverage High-Level Meeting in September 2023.

³¹ <https://www.immunizationagenda2030.org/strategic-priorities/immunization-programmes-for-primary-health-care-universal-health-coverage>

Working Group for strategic priority 2: Commitment and demand

- A range of activities have taken place to support implementation of the IA2030 recommendations. These have focused on promoting the value and importance of vaccination, supporting implementation of actions to assess and address reasons for low uptake, with a focus on integrated catch-up and enhancing service quality and workforce capacity, and strengthening demand via implementation of evidence-based strategies to increase coverage and equity.
- The SP2 Working Group completed a range of activities connected to the Vaccination Demand Hub³², a global partner coordination mechanism. There is close alignment between the objectives of IA2030 strategic priority 2 and the Demand Hub IA2030, and it is a standing agenda item in monthly Demand Hub meetings.
- A number of activities were conducted through the Demand Hub to help achieve the objectives of IA2030 SP2 through engagement with countries and expanded partners. These included several expanded partner meetings, a meeting in Nairobi for priority countries in Africa, a Demand Hub Steering Committee in-person meeting, and a side-event at the Vaccine Acceptance Research Network meeting.

Working Group for strategic priority 4: Life-course and integration

- As part of the IA2030 supplement in *Vaccine*, an article on life-course vaccination and integration was published in December 2022³³.
- An SP4 Life-Course and Integration webinar series was held from February to May 2023 covering topics related to:
 - The integrated life-course approach to vaccination.
 - Health worker vaccination programmes and opportunities beyond COVID-19.
 - Catch-up vaccination – an ongoing safety net to reduce immunity gaps across the life-course.
 - Opportunities for integrating COVID-19 vaccination with essential immunization services within primary health care.
 - School platforms for vaccination status checks and catch-up opportunities.
- SP4 co-chairs participated in a “global café” with the International Federation of Aging to discuss life-course vaccination, particularly in older adults.
- Life-course vaccination was presented as a topic at the Western Pacific Region pre-RITAG and RITAG meetings.
- The Eastern Mediterranean Region hosted a consultative meeting on the development of a regional life-course immunization and integration strategy in May 2023.
- An analysis on the global extent of life-course vaccination was commissioned in 2023 to examine the vaccine schedules reported through the eJRF. This analysis will be useful for advocacy purposes to show how some regions and countries are advancing their life-course approach to vaccination.

Working Group for strategic priority 5: Outbreaks and emergencies

³² <https://demandhub.org>

³³ Wallace AS, Ryman TK, Privor-Dumm L, Morgan C, Fields R, Garcia C, Sodha SV, Lindstrand A, Nic Lochlainn LM. *Leaving no one behind: Defining and implementing an integrated life course approach to vaccination across the next decade as part of the immunization Agenda 2030*. *Vaccine*. 2022:S0264-410X(22)01452-9. doi: 10.1016/j.vaccine.2022.11.039.

- Working Group members have continued to advocate for immunization recovery through in-country, regional and global programmes of their respective agencies.
- The Working Group held a webinar on “Reaching zero-dose children: Immunization in fragile/conflict-affected settings” and members have participated in many other learning platforms to promote restoration and recovery of immunization.
- Most of the conflict-affected countries are not included in the 20 focus countries due to their small population sizes, even though a higher proportion of the population is zero-dose in some of these countries. Addressing challenges in these countries are being reflected in regional priorities, and Working Group members are supporting these regional efforts.
- Working Group members participated in working groups and steering committees of the Joint Convening of COVID-19 Vaccinations in Humanitarian Settings. An action plan for equitable vaccination in humanitarian settings was released from the joint convening, capturing lessons from the issues experienced during the early days of responding to COVID-19 pandemic in humanitarian settings.
- No indicator yet exists for SP5.2, fragile, conflict-affected and humanitarian settings, because of challenges around collection of immunization data in these situations. The Working Group held several sessions that explored triangulation of data to assess the burden of zero-dose and resiliency in conflict settings. In collaboration with colleagues from Johns Hopkins University, the Working Group has supported efforts to use DHS survey results to estimate immunization coverage in humanitarian, conflict or inaccessible areas.
- The interaction between climate change and emergencies will continue to be an area that the Working Group will explore going forward.

Working Group for strategic priority 6: Supply and sustainability

- The Working Group helped to disseminate key findings from the World Bank’s Double Shock, Double Recovery analyses and updates on the impact of the pandemic and the resulting macro-fiscal challenges.
- IA2030 monitoring indicators in this area are being refined. This has included a consultation/survey on priorities for improvements in immunization expenditure data, which has received more than 80 responses from the national, regional and global levels. Inputs will feed into a five-year immunization expenditure strengthening plan.
- The Working Group has worked with IA2030 Working Groups for middle-income countries and supply on vaccine financing challenges faced by non-Gavi middle-income countries. In March 2023, a seminar was organized with the middle-income countries Working Group to better understand restoration and recovery challenges in Brazil and Mexico (two of the 20 priority countries, both never Gavi-eligible) with representatives from those countries.
- Seminars on malaria vaccines and HPV vaccine introduction have been held with the World Bank and Global Financing Facility.
- The World Bank published a blog post “How to finance ‘the Big Catch-Up’, allowing more children and communities to be protected from vaccine-preventable diseases” written by Working Group members Michael Kent Ranson and Phillis Kim.
- An article on “Sustainable Financing for Immunization Agenda 2030” was published online in the journal *Vaccine* in December 2022.
- Planned future activities include:
 - Given Gavi’s interest in conditional cash transfers for immunization, a seminar will be held on this topic, drawing on experience from other sectors.

- A continuing focus on integration issues, particularly integrated priority-setting, planning and budgeting, and implications for NITAGs and NIS activities.
- Continued work on monitoring indicators, strengthening immunization expenditure data for decision-making, and revision of JRF financing indicators.
- Continued dissemination of macro-fiscal projections at the country level and implications for health/PHC/immunization.
- Through our members, contribute to development of Gavi 6.0, especially on funding policy and middle-income country strategy.
- Continued work with the middle-income country and supply Working Groups on vaccine procurement and financing issues for non-Gavi MICs.

Working Group for strategic priority 7: Research and innovation

- See discussion of SP7 indicators (page 48).

Working Group for Data Strengthening and Use

- The Working Group has been discussing approaches for monitoring vaccination catch-up. This starts with understanding current practices from data reported in the WHO/UNICEF Joint Reporting Form (eJRF).
- The Working Group will continue working with IA2030 partners on better refining and answering three questions:
 - Monitoring catch-up immunization services in the context of the Big Catch-Up and routine immunization programmes – for course correction at first and to better understand if objectives were met.
 - Monitoring process indicators that may relate to success or not of planned interventions.
 - What can be learned and used in routine immunization, including the routinization of catching-up children to close immunity gaps.

To answer these questions, case studies and other approaches are being discussed.

- The Working Group has started a learning series where organizations represented in the Group present their experiences of projects/programmes relating to data use.
- MOMENTUM (with organizations represented in the Working Group) published a landscape analysis of health information systems and data tools for identifying, reaching, and monitoring zero-dose and under-immunized children³⁴. This landscape analysis has a focus on MOMENTUM Routine Immunization Transformation and Equity project countries, such as the Democratic Republic of the Congo (DRC), Kenya, Mozambique and Nigeria.
- The Working Group has a strong focus on the learning agenda for immunization data systems and data use for decision-making, particularly at sub-national levels in low- and middle-income countries.
- Other Working Group activities have included:
 - Matching the priorities included in the Immunization Data Action Framework with the 2019 SAGE recommendations on data quality and use.
 - Establishing a task team to support shaping and monitoring of Gavi's Measurement and Learning (M&L) strategic focus area.

³⁴ <https://usaidmomentum.org/resource/landscape-analysis-of-health-information-systems-and-data-tools-for-identifying-reaching-and-monitoring-zero-dose-and-under-immunized-children/> and [How Data Systems Can Help Reach Zero-Dose and Under-Immunized Children](#).

- Establishing a satellite technical work group to provide advice to WHO and UNICEF on vaccination coverage data and estimation.
- Launch of the Data Learning Series.
- Discussions on knowledge gaps, the need to better evaluate various approaches to increase/improve data use and development of data points in the immunization workflows at various levels, following the model of the “immunization caregiver journey” and the COM-B framework for identifying barriers/drivers to health behaviours and related interventions.

Working Group for Disease-Specific Initiatives

- The Working Group provides a forum for the exchange of information across disease-specific initiatives, including the Global Polio Eradication Initiative (GPEI), Measles and Rubella Partnership (M&RP), Defeating Meningitis by 2030, the Global Task Force on Cholera Control, Eliminate Yellow Fever Epidemics (EYE) initiative, the Cervical Cancer Elimination Initiative (CCEI), and programmes focusing on hepatitis B, maternal and neonatal tetanus elimination (MNTE), typhoid, Ebola and malaria.
- The Working Group has mapped activities within each disease area that support the achievement of the 2022 IA2030 recommendations endorsed by SAGE.
- Discussions have been held on potential revisions to global IA2030 indicators.
- A concept note has been developed on further exploration of opportunities for integration of more than one public health intervention in immunization campaigns to improve efficiency. As part of this work, the Working Group has been collating the processes involved in campaign integration and reviewing existing campaign guidelines to identify current guidelines/recommendations, where they exist, for each disease-specific initiative. This work has also involved engagement with the Health Campaign Effectiveness Coalition and the Task Force for Global Health, key partners in advancing campaign integration research.
- The Working Group has provided feedback to the development team of the Health Campaign Intelligence Hub to improve the quality of information and usability of its platform for sharing insights on historic and planned campaigns.
- Along with the M&E Working Group, the Disease-Specific Initiatives Working Group has also helped collate surveillance and outbreak-related data from different disease-specific initiatives to record progress against IA2030 indicators.

I. Conclusion

Following two years of declining coverage, 2022 saw a return to an upwards trajectory, with key global coverage indicators showing an increase over 2021 and returning close to or above those seen in the baseline year of 2019. The number of zero-dose children has similarly declined, although remains above baseline levels.

However, global averages hide wide variation. Recovery has been stronger in some regions than others, and overall figures are influenced by the strong performance of a few large countries such as India and Indonesia. Elsewhere, the picture does not look so rosy, with coverage continuing to stagnate within the African Region – although some countries have impressively bucked the trend. Unlike other regions, the Africa Region faces the additional challenge of a rapidly growing population, meaning ever-increasing numbers of infants need to be reached each year.

Furthermore, **measles** immunization coverage showed a more modest increase compared to DTP, sustaining high risks for large and disruptive outbreaks.

A deeper look at the data suggests that, while some recovery has been seen, **certain groups of countries – such as low-income and lower middle-income countries – have not matched the progress of those that have rebounded well post-pandemic.** Furthermore, in-country data suggest that **limited if any progress has been made in reaching the most under-served populations.**

A particular challenge for the coming years is therefore to broaden recovery to additional countries, and to double down on efforts to reach under-served communities.

This will not be easy, in a world of significant economic uncertainty and political volatility. **Mobile and displaced populations** are a particular challenge to national immunization programmes but are growing inexorably in number. Among a range of concurrent crises, **climate change, including extreme weather events**, is already beginning to be felt in many countries, disrupting access to services, leading to more displacement and adding yet another economic strain on hard-pressed countries.

It is sometimes easy to overlook what immunization achieves – including its **prevention of more than 4 million premature deaths every year.** What motivates IA2030 global, regional and country partners, however, is the belief that even more lives could be saved. Further progress in the areas discussed in this report will ensure this becomes a reality.