

TURNING THE CORNER:

IA2030 GLOBAL REPORT 2023



FOREWORD

This report summarizes the current status of immunization around the world and progress being made by countries and partners in implementing the Immunization Agenda 2030 (IA2030), the global immunization strategy for the decade through 2030. It includes a summary of:

- Immunization data for 2022, the latest year for which comprehensive and verified data are available, as originally published in the IA2030 Technical Progress Report 2023.
- A snapshot of preliminary data for 2023, to provide an indication of more recent trends in key areas.
- The response of regional and global partners and other stakeholders to the latest IA2030 data.

After alarming backsliding in immunization coverage during the COVID-19 pandemic, the beginnings of a recovery in immunization coverage were seen in 2022. However, because of lower coverage during the pandemic years, as well as delays in campaigns to plug immunity gaps, there are now millions of under-immunized children older than the usual reach of routine infant immunization programmes. **Inevitably, we are now witnessing the resurgence of diseases such as measles and diphtheria.** There were an estimated 9.8 million cases of measles in 2022, leading to 136,000 deaths, mostly of children. With reported cases of measles increasing by 80% in 2023, these numbers are certain to increase when modelled estimates for actual case numbers and deaths are generated in November this year.

These trends are a stark reminder of what happens when vaccine coverage slips: hard-won gains are easily lost. The urgent challenge now is to ensure rapid and effective responses to outbreaks, but also to close the immunity gaps that fuel them, and to strengthen immunization programmes to prevent the gaps becoming any bigger. The "Big Catch-Up" initiative launched in 2023 therefore has three goals – to reach children missed during the pandemic years, to restore coverage levels to those seen pre-COVID, and to strengthen immunization systems to re-establish the trajectory towards 2030 targets.

Another key point is that the recovery has been uneven globally. Some countries have bounced back rapidly following the pandemic while coverage in others has not recovered

– a worrying sign of limited resilience. Many low-income countries, and those affected by conflict and instability, face multiple challenges and have not yet turned the corner. They need our support now more than ever.

Those of us who work in immunization know how uniquely powerful vaccines are.

They save lives, keep people healthy and economically productive, and mean less is spent on treatment and long-term disabilities. This year is the 50th anniversary of the launch of the Expanded (now Essential) Programme in Immunization (EPI). New modelling suggests that the EPI initiative has saved more than 150 million lives and has been the single biggest contributor to greatly reduced infant mortality – in some regions accounting for half the total reduction.

EPI successes reflect the tireless efforts of countless people within countries, working at the regional level and global partners. These efforts continue to this day, and we salute every health worker, support staff and volunteer who has striven to ensure that as many as possible of the 134 million infants born in 2023 are protected against vaccine-preventable diseases.

As outbreaks continue to grow, these efforts need to be redoubled. Current outbreaks need to be brought under control and coverage strengthened to prevent their recurrence, as a matter of urgency. In countries, pockets of low coverage must be tackled; globally, countries with low or declining coverage must recommit to protecting their populations, and deserve our support. If we can achieve that, the next 50 years will be worth celebrating as much as the last 50 years.

IA2030 Partnership Council

A list of Partnership Council members can be found on page 85



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SECTION 1

EXECUTIVE SUMMARY

Globally, the initial signs are that the upwards trajectory in vaccine coverage seen in 2022 was maintained in 2023. However, progress varies markedly between countries, and many low-income countries have yet to turn the corner. A surge in vaccine-preventable disease outbreaks through 2022 and 2023 underscores the need for urgent action to quash current outbreaks and build population immunity to prevent their recurrence.

The Immunization Agenda 2030 (IA2030), the global immunization strategy for the decade up to 2030, aims to ensure that everyone, everywhere, at every age fully benefits from vaccines for good health and wellbeing. At the start of the decade, the COVID-19 pandemic severely undermined efforts to achieve this goal. Globally, coverage of the standard indicator of infant vaccination, three doses of diphtheria, tetanus and pertussis (DTP3), fell in 2021 and the numbers of "zero-dose children" – those not receiving any doses of DTP – increased. This was backsliding to an extent not seen since the 1990s, and wiped out more than a decade's progress.

In 2022, the latest year for which validated figures are available, there were some signs that this decline had been halted and reversed. As summarized in the [IA2030 Technical Progress Report 2023](#), **DTP3 coverage increased globally from 81% in 2021 to 84% in 2022, although this was still below the 2019 pre-pandemic baseline figure of 86%.**

In addition, **the numbers of zero-dose children fell by 3.8 million**, from 18.1 million in 2021 to 14.3 million in 2022. However, numbers are still higher than in baseline year 2019 (12.9 million), higher than the target for 2022 (11 million), and far higher than the global target for 2030 of 6.5 million.

Furthermore, **progress has been very uneven globally.** For example, just one country (India, which accounts for nearly a fifth of global births each year) accounted for 40% of the improvement in the numbers of zero-dose children. Five countries – Brazil, India, Indonesia, Myanmar and the Philippines – accounted for more than 3 million of the 3.8 million drop.

Focusing only on **low-income countries**, average DTP3 coverage showed no increase between 2021 and 2022 (71% in 2021, 70% in 2022) and the numbers of zero-dose children in low-income countries rose slightly. Africa was the only region in which the numbers of zero-dose children increased in 2022 compared with 2021. Even these numbers mask variability between countries, with coverage increasing in some low-income countries and declining in others.

Within countries, the evidence suggests that **equity gaps are not closing.** Since baseline year 2019, the average gap in coverage between the highest-performing and lowest-performing districts has been growing rather than shrinking. For first-dose measles vaccination, for example, average coverage in the lowest-performing 20% of districts was 6% lower in 2022 than in 2019 (66% versus 72%), while average coverage in the highest-performing 20% of districts rose by 7% in the same period.

The consequences – outbreaks on the rise

The consequences of the declines in coverage during the pandemic are now being felt, confirming warnings raised in 2020¹. For measles in 2022:

- The number of countries affected by **large or disruptive measles outbreaks increased by 68%** (from 22 to 37).
- An estimated **9.8 million cases of measles** occurred.
- The estimated **number of measles deaths increased by 43%** (from 95,000 to 136,000).

Preliminary data indicate that these trends continued into 2023. The number of countries reporting large or disruptive measles outbreaks rose again, to 51 in 2023. Similarly, the number of reported cases of measles increased by 79% between 2022 and 2023. Given the large increase in reported cases in 2023, **it is certain that the actual number of cases, and the number of measles deaths, also rose sharply in 2023.**

The number of countries affected by large or disruptive circulating vaccine-derived poliovirus (cVDPV) remains high. Cases arise when population coverage with polio vaccine is low, allowing live attenuated vaccines to circulate and revert to a form that can cause disease. Extensive reactive campaigns have been needed to control cVDPV outbreaks, with 32 countries affected in 2022, compared with 34 in 2021. Preliminary data indicate that 35 countries were affected by cVDPV outbreaks in 2023, although case counts in these countries fell by 40%.

¹ <https://polioeradication.org/news-post/unicef-and-who-call-for-emergency-action-to-avert-major-measles-and-polio-epidemics/>

Improving coverage

Preliminary 2023 data on vaccine use in 82 countries, although incomplete and provisional, suggest that the recovery in vaccination continued into 2023. However, full analysis will be required to determine the extent of this recovery and the degree to which it occurred across different groups of countries.

To address the imperative to plug growing immunity gaps, the **"Big Catch-Up" initiative** was launched in 2023. The three-pronged approach includes efforts to immunize those missed during the pandemic years, some of whom are now 5 years old; recovery of programme performance to reach the new birth cohort at least as well as before the pandemic; and, crucially, to rapidly improve programme reach to resume the trajectory towards 2030 goals.

Equity is central to the Big Catch-Up – a core goal of catch-up activities is to reach communities that have traditionally been underserved, and to strengthen delivery mechanisms to ensure they are not missed in the future.

Multiple countries have launched initiatives to immediately reach children who missed vaccinations during the pandemic years. Global partners are coordinating efforts to support low-income countries, for example through advocacy, coordinated technical assistance, greater flexibility in the use of existing funding, and provision of additional vaccine doses for children up to 5 years of age who missed doses as infants during the pandemic. In some countries, vaccination of children beyond the usual cut-off of 2 years of age has required amendments to national immunization policy and retraining of health workers.

Extending protection against additional pathogens

New vaccines are now available for devastating diseases that were previously not vaccine-preventable. After decades of work, the first approved ***Plasmodium falciparum* malaria vaccine**, RTS,S/AS01, is being rolled out in Africa, complementing other methods of prevention such as insecticide-treated bednets. Following the path forged by RTS,S/AS01, a second malaria vaccine, R21/Matrix-M, was recommended by WHO in 2023. Although supply of the two products is expected to meet high demand in Africa in 2024 and beyond, resource constraints may limit countries' access to vaccines and other malaria control interventions.

A new **oral polio vaccine**, nOPV2, achieved WHO prequalification in 2023, following initial use under the WHO Emergency Use Listing regulatory pathway. nOPV2 is now being extensively used to control cVDPV outbreaks, and its greater genetic stability is associated with a reduced risk of reversion to a disease-causing form.

A vaccine for use in mothers to protect newborns against **respiratory syncytial virus (RSV)** received its first national regulatory approval in 2023, alongside new vaccines for

dengue and **chikungunya**, two mosquito-transmitted viral infections. Substantial funding was also agreed for a major phase III trial of the M72/AS01_E vaccine for prevention of **tuberculosis (TB)** disease in adults and adolescents, with the first participants enrolled in March 2024. If safety and preliminary efficacy signals are confirmed, this vaccine could have a major, long-sought impact on the global TB epidemic.

Challenges and opportunities

Immunization services are highly successful in reaching people – few (if any) other health services can match DTP3 coverage of 84%. Increasing that figure will not be easy, but is essential to bring vaccine-preventable diseases back under control.

Unfortunately, several global trends will make this an even greater challenge. As well as already contributing to the increasing number of outbreaks, **climate change** is raising the risk of known and as yet unknown infectious diseases, changing disease epidemiology, disrupting service delivery, and affecting the capacity of people to access those services.

The effects of climate change are interacting with other factors, including **conflict and fragility**, which are driving forced displacement and humanitarian emergencies. **Global financial uncertainty** and **economic threats** continue to limit countries' ability to invest in health.

These are challenges facing not just immunization. Tackling them will require an all-of-partner and all-of-society approach that recognizes the need to meet multiple health needs in difficult-to-reach and volatile settings. The benefits will be shared by individuals, households and countries, and the world as a whole, as immunization is also key to **health security**. **Pandemic preparedness and response**, for example, is predicated on comprehensive and integrated surveillance, incorporating vaccine-preventable disease surveillance, as well as resilient programmes that can effectively deliver vaccines through various health system platforms.

Vaccination also plays a critical role in the battle against **antimicrobial resistance**, by preventing infections and reducing antibiotic use. Stronger **primary healthcare systems**, with immunization services at their heart, will be critical to advancing global **universal health coverage** ambitions.

The past 50 years and the next 50 years

Key to these contributions to health security, however, will be ensuring that vaccines reach all those who stand to benefit. Through the **Expanded Programme on Immunization (EPI)** initiative, founded on 23 May 1974 at the World Health Assembly and celebrating its 50th anniversary in 2024, countless health workers have delivered an ever-growing breadth of immunization services to communities worldwide. Now often called the Essential

Programme on Immunization, the term "EPI" is frequently used as a synonym for national immunization programmes. More than that, though, EPI is a symbol of a collective vision to protect everyone, everywhere against key vaccine-preventable diseases.

Over those 50 years, vaccination has saved an estimated 154 million lives, resulting in more than 10 billion years of health gained². In 2024, children below 10 years of age are 40% more likely to survive to their next birthday than they would be in a world without vaccines.

The 50th anniversary EPI celebrations will therefore be a time to reflect on and celebrate the collective progress made, and to inspire future progress towards IA2030 targets for the decade – including halving the number of zero-dose children and ultimately averting 50 million deaths through immunization.

However, the alarming increase in outbreaks witnessed in 2023 and 2024 is a powerful warning of what can happen when vaccine coverage wanes. Constant vigilance is required to keep vaccine-preventable diseases at bay. The world now faces the urgent challenge of tackling the forest fire of outbreaks, while also focusing on the key aims of the Big Catch-Up – plugging immunity gaps, recovering to pre-pandemic coverage, and strengthening systems to achieve the trajectory towards 2030 targets – all three of which will be essential to keep the world safe from vaccine-preventable diseases.

2. Shattock AJ, Johnson HC, Sim SY et al. Contribution of vaccination to improved survival and health: modelling 50 years of the Expanded Programme on Immunization. Lancet. 2024:S0140-6736(24)00850-X. doi: 10.1016/S0140-6736(24)00850-X.



WHO/Christopher Black

SECTION 2

INTRODUCTION

The Immunization Agenda 2030 (IA2030), the global immunization strategy for the decade up to 2030, provides a framework to align the activities of immunization stakeholders working at different levels – in countries, regionally and globally – around a shared set of priorities and targets, and the approaches needed to achieve these targets. The ultimate aim is to ensure that "everyone, everywhere, at every age fully benefits from vaccines for good health and wellbeing".

Immunization programmes have been highly successful at ensuring that more than eight out of every ten babies born each year are protected against key vaccine-preventable diseases – such as diphtheria, tetanus and pertussis (DTP, a widely used marker of vaccination reach). However, that still leaves almost two out of every ten unprotected – and in some settings a much greater percentage.

The launch of IA2030 coincided with the onset of the COVID-19 pandemic, which set back many aspects of healthcare, including immunization and vaccine-preventable disease control. Ground has been lost, and urgent efforts are needed to reverse the impact of the pandemic and to re-establish a trajectory towards 2030 targets endorsed by the World Health Assembly (WHA) in 2021.

IA2030 progress is being tracked through a monitoring, evaluation and action (ME&A) framework, which includes seven indicators relating to high-level **IA2030 Impact Goals** and a larger set of **Strategic Priority indicators**, linked to more specific aspects of the IA2030 strategy, including key areas of immunization programme performance.

This Global Report summarizes:

- Final data for 2022, the most recent year for which validated country data are available.
- Provisional data from 2023, which have not yet been through a rigorous quality assurance process but give initial indications of trends in some key areas.
- A brief summary of progress in new vaccine development.
- An overview of the actions and responses to 2022 and emerging 2023 data across key stakeholders at country, regional and global levels.
- Some of the longer-term challenges and opportunities facing immunization up to 2030.

Annex 1 provides a summary of Impact Goal indicator data; Annex 2 summarizes Strategic Priority indicator data.

IMMUNIZATION DATA REPORTING

Most annually reported immunization data are collected from countries through the **electronic Joint Reporting Form (eJRF)** in the early months of the following year. Data go through an extensive collation and validation process, before being released in July each year as **WUENIC estimates** (WUENIC: WHO and UNICEF Estimates of National Immunization Coverage). Along with other data, WUENIC estimates are published in an annual **IA2030 Technical Progress Report** each September. While this process provides more reliable information, it means that data are released more than six months after the end of a reporting year.

More recent data from countries (in this case for 2023) provide a more up-to-date picture of immunization progress, although such preliminary data should be interpreted with caution as they have not been subject to the same in-country and global data-validation processes. In addition, data are typically available from only a subset of countries.

This report focuses mainly on validated data from 2022, originally published in the [IA2030 Technical Progress Report 2023](#) and available on the [IA2030 Scorecard](#). Data from 2023 included here are intended to give an initial indication of likely trends, in advance of validated data becoming available from July 2024 onwards.



WHO/Bill Miaron

SECTION 3

THE STATUS OF IMMUNIZATION IN 2022 AND 2023

SUMMARY

2022

- Globally, **DTP3 vaccine coverage** rose in 2022 compared with 2021 but was still below pre-pandemic levels.
- The numbers of **zero-dose children** fell compared with the 2021 peak, but were still more than 10% above pre-pandemic levels.
- **Coverage gains have been uneven**, and low-income countries have shown least bounce-back post-pandemic.
- The number of countries affected by **large or disruptive measles outbreaks** rose significantly.

2023

- **Reported measles cases** and **large or disruptive measles outbreaks** both showed big increases in 2023.
- The number of countries affected by **cVDPV outbreaks** remained high in 2023; multiple countries have been affected by **diphtheria outbreaks**.
- Preliminary data from 2023 for a subset of countries indicate an **increase in the number of vaccine doses administered** compared with 2022, suggesting a continuing rise in coverage.

OUTLOOK

- While the beginnings of post-COVID recovery are apparent, **progress is uneven and slowest in the most disadvantaged settings**.
- The accumulation of under-immunized children following years of inadequate vaccine coverage is **fuelling outbreaks of vaccine-preventable diseases** worldwide.

MEASURES THAT MATTER:

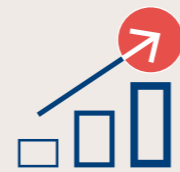
DTP3 coverage: Coverage of third dose of diphtheria, tetanus and pertussis (DTP) vaccine, the standard indicator of infant vaccination coverage.

Zero-dose children: Children not receiving any doses of DTP vaccine, and therefore missed completely by immunization services.

Measles cases: As measles is so contagious, measles outbreaks are typically the first sign of inadequate vaccine coverage, so measles is used as a "tracer" of immunization programme performance.

“ Progress is uneven and slowest in the most disadvantaged settings. ”

COVERAGE



2022 STATUS:

- Globally, **DTP3 coverage increased by 3%**, from 81% in 2021 to 84% in 2022, but remained below pre-pandemic levels (86%).
- The number of **zero-dose children decreased by 3.8 million**, from 18.1 million in 2021 to 14.3 million in 2022, but remained higher than in baseline year (12.9 million in 2019).
- Five countries – India, Indonesia, the Philippines, Myanmar and Brazil – accounted for **more than 3 million of this decline in zero-dose children**.
- Progress has been highly **uneven** globally; across 26 low-income countries, average DTP3 coverage showed no increase, and fell further in 2022 in nearly one in three such countries.
- Within countries, **equity gaps** remain – average DTP3 coverage in the 20% of districts with the lowest coverage showed no increase between 2021 and 2022, and was 5% lower than in 2019; by contrast, average coverage in the 20% best-performing districts was 2% higher in 2022 than in 2019.
- Excluding COVID-19 vaccines, **new vaccine introductions** in low- and middle-income countries **increased from 39 in 2021 to 45 in 2022**, broadly in line with the average number of introductions over the past decade.

ZERO-DOSE SUCCESSES:

India:	▼ 1.59m (▼58.5%)
Indonesia:	▼ 0.58m (▼50.3%)
Philippines:	▼ 0.41m (▼39.2%)
Myanmar:	▼ 0.32m (▼65.9%)
Brazil:	▼ 0.28m (▼39.3%)
Mexico:	▼ 0.19m (▼59.3%)
Pakistan:	▼ 0.18m (▼29.5%)
Tanzania:	▼ 0.18m (▼46.1%)
Vietnam:	▼ 0.11m (▼61.0%)

Change in absolute numbers of zero-dose children and percentage decrease between 2021 and 2022, among the 20 countries with the highest numbers of zero-dose children in 2021.

PRELIMINARY 2023 PICTURE:

- Preliminary monthly **administrative data** from 82 countries, representing 68% of the global surviving infant cohort, suggest that the **number of DTP vaccine doses administered was higher in 2023 than in 2022**.
- This is encouraging, but factors such as population growth and validation of administrative data will need to be taken into account to determine whether the increase translates to increased coverage and reduced numbers of zero-dose children.
WUENIC country-specific coverage estimates for 2023 will be released on 15 July 2024.
- According to preliminary data for 2023, **21 new vaccine introductions** were reported to WHO by low- and middle-income countries, including eight inactivated polio vaccine (IPV) second dose and seven human papillomavirus (HPV) vaccine introductions.
HPV vaccine was also introduced in four high-income countries.

OUTBREAKS & CASES



2022 STATUS:

- Compared with 2021, changes in the number of countries affected by large or disruptive outbreaks varied between pathogens:
 - **Measles: Increased** (from 22 to 37).
 - **Cholera: Increased** (from one to five).
 - **Meningococcal disease: Increased** (from two to four).
 - **Wild poliovirus*:** **Did not change** (three in each year).
 - **Ebola: Did not change** (none in either year).
 - **Yellow fever: Decreased** (from six to one).
 - **Circulating vaccine-derived poliovirus (cVDPV): Decreased** (from 34 to 32).
- Overall only modest progress has been made towards global and regional vaccine-preventable disease **eradication and elimination targets** since baseline year 2019.

*For wild poliovirus, a single case counts as a large or disruptive outbreak. Wild poliovirus was endemic in Afghanistan and Pakistan in both 2021 and 2022, while an importation event from Pakistan into south-eastern Africa resulted in a case in Malawi in 2021 and eight cases in Mozambique in 2022.

PRELIMINARY 2023 PICTURE:

- The number of countries experiencing large or disruptive **measles outbreaks** in 2023 **increased** by 59% over 2022, from 32 to 51.
- The number of **reported measles cases** globally **increased** by nearly 80% compared to 2022, from 171,000 to more than 306,000.
Reported cases are a small fraction of the actual number of cases.
- **Modelled estimates** for actual measles case numbers in 2023, based on reported cases, will be published in November 2024. In 2022, the estimated total number of measles cases in 2022 was **9.8 million**, and the estimated number of deaths was **136,000**¹. It is expected that **both these numbers will be substantially higher in 2023**.
- The number of countries affected by large or disruptive **cVDPV outbreaks increased** from 32 in 2022 to 35 in 2023 (the 2023 figure may be revised).
- Multiple outbreaks of **diphtheria**, formerly well controlled, have occurred across multiple countries in West Africa, South-East Asia and the Western Pacific Region.
- **Shortages of certain vaccines**, including oral cholera vaccine (OCV)², nOPV2³ and Men5CV meningococcal vaccines, have hampered outbreak control responses.

1 Minta AA, Ferrari M, Antoni S et al. Progress Toward Measles Elimination - Worldwide, 2000-2022. MMWR Morb Mortal Wkly Rep. 2023;72(46):1262-1268. doi: 10.15585/mmwr.mm7246a3.

2 <https://www.gavi.org/news/media-room/global-vaccine-alliance-outlines-path-sustainable-cholera-vaccine-supply>

3 <https://polioeradication.org/news-post/whats-next-for-the-novel-oral-polio-vaccine-type-2-nopv2-now-that-its-been-who-prequalified/>

LIVES SAVED



2022 STATUS:

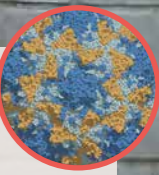
- An estimated **4.1 million future deaths** were averted by vaccination against 14 key pathogens in 2022.
- However, the number of future deaths averted in 2022 was **9.2% lower than targeted by the IA2030 strategy**; an estimated additional 422,000 deaths from vaccine-preventable diseases will occur in the future as a result of lower than anticipated vaccine coverage.

PRELIMINARY 2023 PICTURE:

- If increased coverage is confirmed for 2023, the estimated number of future deaths averted will be higher. However, major efforts will be needed in 2024 and beyond to achieve the coverage and vaccine introductions required to secure the IA2030 “lives saved” target of 50 million by 2030.

See Annex 1 for full data on IA2030 Impact Goals.

POLIO



Wild poliovirus is now restricted to areas in just two countries – with challenging environmental and geopolitical contexts the main obstacle to eradication.

Through the concerted efforts of countries and the Global Polio Eradication Initiative (GPEI) partners, wild poliovirus is now confined to a handful of districts in eastern Afghanistan and Pakistan. Just one strain of poliovirus remains endemic in these countries. In 2023, 12 cases of wild poliovirus were detected (six in Afghanistan and six in Pakistan), compared with 22 in 2022.

In 2021 and 2022, isolated cases of wild poliovirus were detected in Malawi and Mozambique; virus genome sequences suggest that they were introduced from Pakistan. Thanks to a comprehensive response in these and neighbouring countries, no further cases of wild poliovirus were identified in 2023 in these or nearby countries.

Circulating vaccine-derived poliovirus (cVDPV), particularly cVDPV type 2, remains a challenge in multiple settings, particularly in Africa, due to inadequate polio vaccine coverage through routine immunization and consequently an over-reliance on supplementary immunization activities. The number of countries experiencing large or disruptive cVDPV outbreaks remained high in 2023 (35 versus 32 in 2022), although the total number of cases declined in 2023. Increasing use of novel oral poliovirus type 2 vaccine (nOPV2), which is genetically more stable, is likely reducing the risk of cVDPV2 outbreaks¹. By the end of 2023, nearly a billion doses of nOPV2 had been administered in 36 countries.

In December 2023, nOPV2 became the first vaccine to be WHO prequalified after being used under the WHO Emergency Use Listing (EUL) regulatory pathway, designed to accelerate introduction of essential new vaccines. Work is continuing on analogous nOPV1 and nOPV3 vaccines, as well as antivirals and monoclonal antibodies for immune-deficient individuals, and on innovations such as vaccines based on virus-free virus-like particles for use in a post-eradication world.

As well as introduction of a second dose of inactivated poliovirus vaccine (IPV2) in the 41 countries that have yet to include it in their schedules, there is an urgent need to increase IPV1 coverage in Africa, particularly in GPEI priority areas where risk of polio reappearance is greatest.

¹ Bandyopadhyay AS, Cooper LV, Zipursky S. One billion doses and WHO prequalification of nOPV2: Implications for the global polio situation and beyond. PLOS Glob Public Health. 2024;4(2):e0002920. doi: 10.1371/journal.pgph.0002920.



MEASLES

As expected, there has been a global surge in measles cases and outbreaks due to the drop in measles vaccine coverage seen during the pandemic, highlighting the urgent need for rapid and effective outbreak responses and for additional efforts to increase measles vaccine coverage.

As measles is so contagious, and very high levels of vaccine coverage are required to achieve herd immunity and stop transmission, measles outbreaks are typically the first indicator of suboptimal immunization coverage. In 2022, coverage of the first dose of measles-containing vaccine (MCV1) rose from 81% to 83%, compared with an increase from 81% to 84% for DTP1, while MCV1 coverage is still below the pre-pandemic level of 86% achieved in 2019.

As a result, the number of reported measles cases and large or disruptive outbreaks increased globally in 2023, particularly in low-income countries and Gulf States, although a large surge of cases was also reported in the European Region in the second half of 2023. Total measles cases reported in 2023, a mere fraction of actual cases, exceeded 306,000, compared with 171,000 in 2022, while the number of countries experiencing large or disruptive measles outbreaks increased to 51 in 2023 from 32 in 2022.

Estimated deaths from measles increased by 43% in 2022 compared with 2021, with 92% of the 136,000 deaths occurring in the African and Eastern Mediterranean Regions. Given the large increase in reported cases during 2023, a further increase in estimated measles deaths is likely to be seen. Modelled estimates of actual measles cases and deaths in 2023, based on the numbers of reported cases, will be released in November 2024.

WHO/Judith Sprunken



STRATEGIC PRIORITY INDICATORS

IA2030 includes indicators associated with its seven Strategic Priorities. These are summarized in Annex 2. The overview below is based on the latest available data, usually from 2022; no preliminary 2023 data are yet available for these indicators.

SP1.2: Health workforce:

No new data in 2022: The most recent data, from 2021, suggested that workforce shortages have eased slightly but remain acute, particularly in the African and Eastern Mediterranean Regions.

TREND UNCERTAIN

SP1.4: Supply chain:

After declining for several years, the number of countries reporting district-level stockouts increased in 2022 (from 29% to 35%).

TREND NEGATIVE

SP1.6: Vaccine safety reporting:

Some serious adverse events following immunization (AEFI) are expected, and should be reported by countries to the global VigiBase database. In 2022, 47% of countries reported at least one AEFI, fewer than the number of countries reporting in 2021.

TREND NEGATIVE

SP2.1: Commitment:

The proportion of countries with legislation in place that is supportive of immunization as a public good increased from 55% to 59%.

TREND POSITIVE

SP2.2: Demand:

The proportion of countries that have implemented behavioural or social strategies to address under-vaccination declined from 69% to 45%. Changes in the wording of the question asked of countries make inter-year comparisons difficult.

TREND UNCERTAIN

SP3.2: Equity within countries:

The difference in coverage between the best-performing and worst-performing districts provides an indication of equity of vaccine access within countries. This is assessed by comparing average district-level coverage in the poorest-performing 20% of districts in each country with either whole-country coverage or coverage in the best-performing 20% of districts. For DTP3, MCV1 and MCV2, coverage in the poorest-performing districts showed no change or fell between 2021 and 2022. For all three, the coverage gap between the best- and worst-performing districts increased between 2019 and 2022, pointing to increasing equity gaps.

TREND NEGATIVE

SP4.1: Breadth of protection across the life-course:

Average breadth of protection coverage (average coverage for 13 vaccines given at different ages) rose year on year and exceeded 2019 baseline levels (2022: 72%; 2019: 71%).

TREND POSITIVE

SP5.1: International outbreak responses:

The proportion of international responses meeting timeliness criteria fell from 28% in 2021 to 18% in 2022.

TREND NEGATIVE

SP6.1: Health of global vaccine markets:

Four markets are defined as "healthy", six as "concerning" and two as "unhealthy". Compared to 2022, market health has improved for BCG and PCV and declined for HPV, IPV and rotavirus vaccines.

TREND UNCERTAIN

SP6.2: Resourcing of primary healthcare:

The proportion of countries showing increased domestic and donor expenditure on primary health rose from 67% in 2018–2019 to 75% in 2019–2020; however, full data are available for only 24 countries.

TREND UNCERTAIN

SP6.3: Domestic expenditure on immunization:

The proportion of low- and middle-income countries showing an increased percentage contribution to national vaccine expenditure fell from 36% in 2021 to 34% in 2022; however, data are available for only 56 such countries (42%).

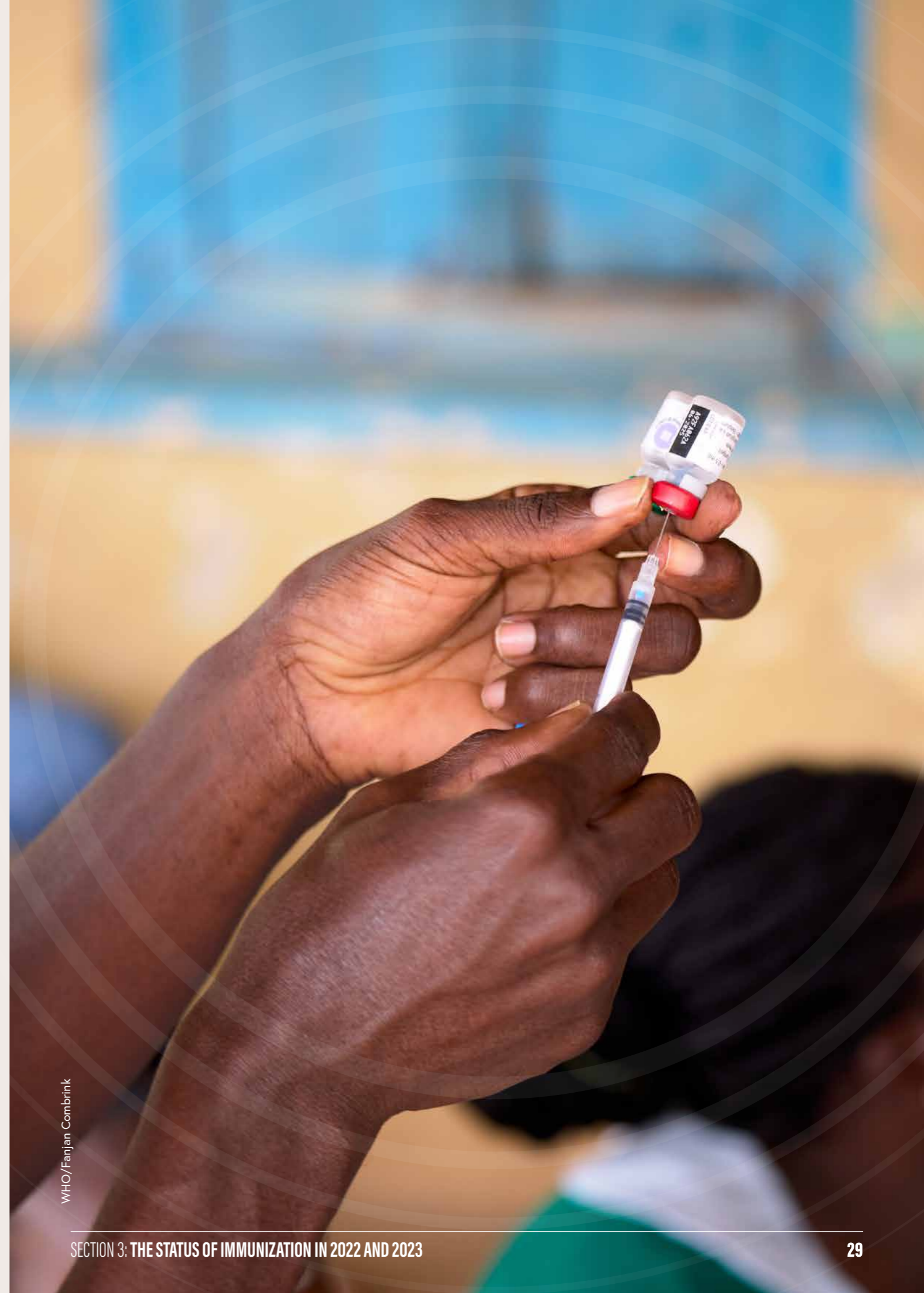
TREND UNCERTAIN

SP7.1: Capacity for innovation:

In 2022, 13.4% of countries reported having a national agenda for research on immunization, up from 12.8% in 2021 but still low in absolute terms.

TREND POSITIVE

“ the gap between the best- and worst-performing districts increased between 2019 and 2022, pointing to increasing equity gaps ”





WHO/Fanjan Combrink

SECTION 4

NEW VACCINE LANDSCAPE

Progress continues to be made in the development of new vaccines and in preparation for new vaccine introductions.

Vaccines being introduced or at late-stage development

Malaria: In 2023, WHO recommended a second malaria vaccine, **R21/Matrix-M**, for malaria prevention in children¹. In addition, further data were announced from the three-country pilot of **RTS,S/AS01** in Ghana, Kenya and Malawi, which confirmed its safety, efficacy and programmatic feasibility. With average three-dose coverage of around 70% in the target population, use of RTS,S/AS01 (with continuation of other malaria control measures) resulted in a 22% reduction in severe malaria in the vaccine-eligible age group and a vaccine-attributable 13% reduction in all-cause mortality (excluding injuries)² during 46 months of scale up. This impact was in addition to that provided by other malaria prevention measures.

Two effective malaria vaccines are now available. More than 30 countries in Africa have expressed an interest in introducing a malaria vaccine and, by the end of 2023, Gavi had approved applications for malaria vaccine introduction from 20 countries. The first introductions outside the three pilot countries began in early 2024, with Cameroon beginning a large-scale vaccine introduction in January³. Alongside other preventive measures, use of these vaccines will have a significant impact on a disease that currently kills around half a million children a year. Research continues on additional vaccines of greater efficacy and to prevent transmission of malaria parasites via mosquitoes.

Tuberculosis (TB): There is an urgent need for a TB vaccine that can prevent TB disease in adults and adolescents. In 2023, Wellcome and the Bill & Melinda Gates Foundation agreed to fund an international multisite phase III trial of the **M72/AS01_E vaccine**, which demonstrated efficacy of around 50% against TB disease over three years in a phase IIb trial. Launched in March 2024, the phase III trial will recruit up to 20,000 participants across 60 sites in seven countries. Additional trials of other TB vaccines are also underway.

While these studies are being carried out, efforts are being made to identify the evidence that global and national policymakers will need to make recommendations on use of a new TB vaccine⁴. WHO has also developed a global framework to prepare for country introduction of new TB vaccines for adults and adolescents⁵. To accelerate efforts, in 2023 the WHO Director-General launched a high-level **TB Vaccine Accelerator Council**, to ensure strong country support for vaccine development and introduction⁶.

1 <https://www.who.int/news/item/02-10-2023-who-recommends-r21-matrix-m-vaccine-for-malaria-prevention-in-updated-advice-on-immunization>

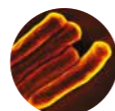
2 <https://www.science.org/content/article/first-malaria-vaccine-slashes-early-childhood-deaths>

3 <https://www.bbc.co.uk/news/world-africa-68037008>

4 https://cdn.who.int/media/docs/default-source/immunization/product-and-delivery-research/who_evidence_considerations_vaccine_policy_development_tuberculosis_vaccines_intended_adults_adolescents.pdf?sfvrsn=4997b3f5_4

5 <https://www.who.int/publications/m/item/who-global-framework-to-prepare-for-country-introduction-of-new-tb-vaccines-for-adults-and-adolescents#:~:text=The%20WHO%20framework%20to%20prepare,new%20vaccines%20are%20manufactured%20with>

6 Ghebreyesus TA, Lima NT. The TB Vaccine Accelerator Council: harnessing the power of vaccines to end the tuberculosis epidemic. *Lancet Infect Dis.* 2023;23(11):1222-1223. doi: 10.1016/S1473-3099(23)00589-3.



Dengue and chikungunya: These mosquito-borne viral infections are a growing global public health threat, with major outbreaks occurring in multiple locations in 2023. In 2023, six million dengue cases and more than 6000 dengue-related deaths were reported from 92 countries⁷, with South and Central America particularly badly affected. In addition, 500,000 cases on chikungunya-related disease were reported in 2023 from 26 countries, with 400 deaths⁸; again, South America has been badly affected.

In 2023, WHO's Strategic Advisory Group of Experts on Immunization (SAGE) made recommendations on the use of a second dengue vaccine, **TAK-003** (Qdenga, Takeda)⁹. The vaccine is beginning to be used in parts of Brazil.

Also in 2023, the first chikungunya vaccine (**Ixchiq**, Valneva) was approved for use in adults by the US Food and Drug Administration (FDA)¹⁰. Notably, due to the unpredictability of outbreaks, which makes it difficult to organize field efficacy trials, licensing was based on immunological data – with 99% of vaccine recipients generating an immune response predicted to be protective against disease¹¹.

Respiratory syncytial virus (RSV): Globally, RSV is responsible for more than 100,000 deaths of young children, 97% of them in low- and middle-income countries, and an estimated 3.6 million hospital admissions¹². In high-income countries, RSV infections in older adults account for almost half a million hospitalizations a year and more than 30,000 deaths¹³. An RSV vaccine (**Abrysvo**, Pfizer) has been licensed in the EU and the US for use in pregnant women to protect newborns¹⁴ and for use in older adults¹⁵. A second RSV vaccine, formulated with AS01E adjuvant (**Arexvy**, GSK), has been approved for use in older adults in the EU and the US¹⁶. An mRNA vaccine (Moderna) has shown high efficacy against RSV lung disease in older adults¹⁷ and several paediatric vaccines are undergoing phase II trials.

7 <https://www.ecdc.europa.eu/en/dengue-monthly#:~:text=In%202023%2C%20over%20six%20million,Global%20situation%2C%20December%202023.>

8 [https://www.ecdc.europa.eu/en/chikungunya-monthly#:~:text=Chikungunya%20virus%20disease%20\(CHIKVD\)%20In,%20and%20Asia%20\(5\).](https://www.ecdc.europa.eu/en/chikungunya-monthly#:~:text=Chikungunya%20virus%20disease%20(CHIKVD)%20In,%20and%20Asia%20(5).)

9 <https://iris.who.int/bitstream/handle/10665/374327/WER9847-eng-fre.pdf?sequence=1>

10 <https://www.fda.gov/news-events/press-announcements/fda-approves-first-vaccine-prevent-disease-caused-chikungunya-virus>

11 Schneider M, Narciso-Abraham M, Hadl S et al. Safety and immunogenicity of a single-shot live-attenuated chikungunya vaccine: a double-blind, multicentre, randomised, placebo-controlled, phase 3 trial. *Lancet.* 2023 Jun 24;401(10394):2138-2147. doi: 10.1016/S0140-6736(23)00641-4

12 Li Y, Wang X, Blau DM et al. Global, regional, and national disease burden estimates of acute lower respiratory infections due to respiratory syncytial virus in children younger than 5 years in 2019: a systematic analysis. *Lancet.* 2022;399(10340):2047-2064. doi: 10.1016/S0140-6736(22)00478-0.

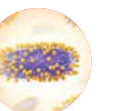
13 Savic M, Penders Y, Shi T et al. Respiratory syncytial virus disease burden in adults aged 60 years and older in high-income countries: A systematic literature review and meta-analysis. *Influenza Other Respir Viruses.* 2023;17(1):e13031. doi: 10.1111/irv.13031.

14 Kampmann B, Madhi SA, Munjal I et al. Bivalent Prefusion F Vaccine in Pregnancy to Prevent RSV Illness in Infants. *N Engl J Med.* 2023;388(16):1451-1464. doi: 10.1056/NEJMoa2216480.

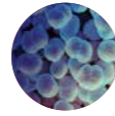
15 Walsh EE, Pérez Marc G, Zareba AM et al. Efficacy and Safety of a Bivalent RSV Prefusion F Vaccine in Older Adults. *N Engl J Med.* 2023;388(16):1465-1477. doi: 10.1056/NEJMoa2213836.

16 Papi A, Ison MG et al. Respiratory Syncytial Virus Prefusion F Protein Vaccine in Older Adults. *N Engl J Med.* 2023;388(7):595-608. doi: 10.1056/NEJMoa2209604.

17 Wilson E, Goswami J, Baqui AH et al. Efficacy and Safety of an mRNA-Based RSV PreF Vaccine in Older Adults. *N Engl J Med.* 2023;389(24):2233-2244. doi: 10.1056/NEJMoa2307079.



Gonococcus: *Neisseria gonorrhoeae*, the second most common bacterial sexually transmitted infection, is of particular concern because of the speed at which it develops resistance to antibiotics. Recently, retrospective data analyses revealed that vaccination with group B meningococcal vaccine (**MenB**), targeting *N. meningitides*, provides significant protection against infection with *N. gonorrhoeae*. Several MenB vaccine trials focused on prevention of *N. gonorrhoeae* infections are due to report in 2024 and 2025. Some countries, including the UK, have already recommended MenB vaccination in high-risk groups to prevent gonococcal infections. Several gonococcus-specific vaccines are also in clinical development.



HIV: Following disappointing results from the PrEPVacc trial¹⁸, no HIV candidate is currently in late-stage clinical development. However, encouraging progress is being made on the development of **broadly neutralizing monoclonal antibodies** for prevention of HIV infection, with early clinical trials demonstrating good safety and neutralizing properties of single and combination antibody treatments¹⁹ ²⁰. Combinations are likely to be needed to address HIV strain diversity.



Meningococcal meningitis: In 2023, SAGE made recommendations on use of a new pentavalent meningococcal conjugate vaccine targeting serogroups A, C, Y, W and X, which has been developed by the Serum Institute of India with support from PATH²¹. The MenA meningococcal conjugate vaccine (MenAfriVac) has had an enormous impact in the 26 countries of the African 'meningitis belt', eliminating MenA epidemics. The new vaccine, **Men5CV**, is an important step forward, widening protection to include additional meningococcal serogroups, including serogroup C, responsible for recent outbreaks in Nigeria and Niger.



Vaccine delivery

Microarray patches (MAPs): Needle-free delivery of vaccines could have game-changing advantages, reducing the need for cold chain storage, helping overcome concerns about injections, and potentially expanding the scope of who can deliver vaccines. Several types of microarray patch (MAP), which deliver vaccines via tiny microneedles just below the skin

surface, are in development, with priority being given to MAPs for measles and rubella (MR-MAPs) for use in low- and middle-income countries.

In 2023, the first phase II data were shared on **MR-MAP use in children**, which showed that the vaccine was as immunogenic as injected vaccine and much preferred by caregivers²². A phase I trial of a second MAP technology also generated positive findings in adults²³. Investment in manufacturing scale-up is now underway to provide material for phase III clinical trials and, if the trials are successful, in anticipation of use in countries following regulatory and policy assessment. Widespread introduction of MR-MAPs is therefore unlikely before the end of the decade. To advance development, consultations are taking place to inform the design of a pivotal phase III MR-MAP trial and to discuss potential use options for MAPs within national immunization programmes.

Hexavalent vaccine: From December 2023, Gavi-eligible countries have been able to apply for support to introduce hexavalent vaccine, an adaptation of the widely used pentavalent vaccine that includes whole-cell pertussis and inactivated poliovirus vaccine (IPV). This will reduce the need to deliver pentavalent and IPV by separate injections and will deliver efficiencies in vaccine management and distribution.

Vaccines for antimicrobial resistance

Vaccines have a critical role to play in combating **antimicrobial resistance (AMR)**. As well as protecting recipients against drug-resistant infections such as pneumococcus, typhoid and *Haemophilus influenzae* type b (Hib), vaccines can also contribute to reduced use of antibiotics, helping to delay the development and spread of resistance.

A recent modelling study suggests that 500,000 deaths associated with or attributable to AMR pathogens could be averted by vaccination annually²⁴. An ongoing study is collating data on the health and economic burden linked to AMR that could be averted by vaccination and consequent impacts on antibiotic use. Full vaccination against priority AMR pathogens could potentially avert hospital costs of more than US\$200 billion globally, as well as other economic losses of up to US\$48 billion. However, for several of the most important AMR pathogens, vaccine development is likely to be highly challenging.

18 <https://www.iavi.org/features/iavi-statement-on-prepvacc-trial/>

19 Mahomed S, Garrett N, Capparelli EV et al. Safety and pharmacokinetics of escalating doses of neutralising monoclonal antibody CAP256V2LS administered with and without VRC07-523LS in HIV-negative women in South Africa (CAPRISA 012B): a phase 1, dose-escalation, randomised controlled trial. *Lancet HIV*. 2023;10(4):e230-e243. doi: 10.1016/S2352-3018(23)00003-6.

20 Sobieszczyk ME, Mannheimer S, Paez CA et al. Safety, tolerability, pharmacokinetics, and immunological activity of dual-combinations and triple-combinations of anti-HIV monoclonal antibodies PGT121, PGDM1400, 10-1074, and VRC07-523LS administered intravenously to HIV-uninfected adults: a phase 1 randomised trial. *Lancet HIV*. 2023;10(10):e653-e662. doi: 10.1016/S2352-3018(23)00140-6.

21 McNamara LA, Neatherlin J. WHO Strategic Advisory Group of Experts on Immunization recommendations for use of a novel pentavalent meningococcal ACWXY vaccine: a critical step towards ending meningococcal epidemics in Africa. *J Travel Med*. 2024;31(1):taae002. doi: 10.1093/jtm/taae002

22 Adigweme I, Yisa M, Ooko M et al. A measles and rubella vaccine microneedle patch in The Gambia: a phase 1/2, double-blind, double-dummy, randomised, active-controlled, age de-escalation trial. *Lancet*. 2024;403(10439):1879-1892. doi: 10.1016/S0140-6736(24)00532-4.

23 Baker B, Birmingham IM, Leelasena I et al. Safety, Tolerability, and Immunogenicity of Measles and Rubella Vaccine Delivered with a High-Density Microarray Patch: Results from a Randomized, Partially Double-Blinded, Placebo-Controlled Phase I Clinical Trial. *Vaccines (Basel)*. 2023;11(11):1725. doi: 10.3390/vaccines11111725.

24 Kim C, Holm M, Frost I, Hasso-Agopsowicz M, Abbas K. Global and regional burden of attributable and associated bacterial antimicrobial resistance avertable by vaccination: modelling study. *BMJ Glob Health*. 2023;8(7):e011341. doi: 10.1136/bmjgh-2022-011341.

Pathogen prioritization for new vaccine development

WHO and the IA2030 Working Group for Strategic Priority 7 (Research and Innovation) have been carrying out an extensive **global consultation exercise** to develop a list of priority endemic pathogens for new vaccine development. This exercise has been based on the collation of evidence on pathogen impacts across eight key criteria and use of a multi-criteria decision analysis (MCDA) tool to rank these criteria, based on multiple comparisons across anonymised pathogens to avoid bias.

A global priority list of 17 pathogens was presented to the WHO Product Development for Vaccines Advisory Committee (PDVAC) in December 2023²⁵ and regional consultations are underway to refine regional priority lists. These efforts will support the alignment of efforts across vaccine developers and other stakeholders.

In 2022, the **WHO R&D Blueprint** announced plans to update its list of priority pathogens of epidemic potential. An extensive consultation exercise has been organized based on viral and bacterial families. An updated priority list is due to be published in 2024.

Regional manufacturing

Since the COVID-19 pandemic, there has been a strong drive to diversify vaccine manufacturing capacity, so all regions are better able to produce vaccines to meet regional needs, particularly during pandemics. The African Union, for example, established a goal of producing 60% of the vaccine doses used in the continent by 2040. The Partnerships for African Vaccine Manufacturing (PAVM), under the Africa Centres for Disease Control and Prevention, was set up to lead efforts toward this goal. A 2023 briefing from the Africa CDC, the Clinton Health Access Initiative (CHAI) and PATH noted that later-stage "fill-and-finish" manufacturing capacity was projected to exceed Africa's needs, while capacity to produce antigen is much lower²⁶.

Key developments in 2023 included the first meeting, in South Africa, of the **mRNA vaccine manufacturing network** established by the WHO and Medicines Patent Pool. A central "hub" in South Africa is supporting mRNA technology transfer to 16 sites globally. The most advanced candidate, a COVID-19 vaccine targeting the XBB.1 strain, is due to enter clinical trials in 2024. A regional meeting in Thailand led to the creation of several international consortia focused on mRNA vaccine development for regional priority pathogens, to advance the utility of new manufacturing sites.

The sustainability of new manufacturing sites remains a key challenge. To respond rapidly to a pandemic, sites need to be operational in inter-pandemic periods, but new sites

25 https://cdn.who.int/media/docs/default-source/immunization/pdvac/pdvac-2024/who-pdvac-executive-summary-draft-12march-2024.pdf?sfvrsn=13639368_1

26 <https://africacdc.org/news-item/african-vaccine-manufacturing-capacity/>

will struggle to compete against existing manufacturers that have the benefits of scale and well-established manufacturing operations. Gavi's new US\$1bn **African Vaccine Manufacturing Accelerator (AVMA)**²⁷, approved by the Gavi Board at the end of December 2023, aims to address this issue by providing milestone funding when facilities achieve certain stages of development (e.g. WHO prequalification) and financial support to enable manufacturers to submit competitive bids to UNICEF procurement calls.

A further notable development was the launch of the **BioNTech mRNA manufacturing facility in Rwanda** in December 2023²⁸. Vaccine production is due to begin in 2025. The **African Development Bank** is providing funding of up to US\$3 billion over 10 years to support development of vaccine manufacturing capacity in Africa.

In March 2024, Gaborone, Botswana, hosted a first of its kind convening with more than 40 representatives from government ministries and national regulatory authorities, manufacturing industries, development partners, research and development partners including WHO and CDC around the theme of "facilitating technology transfer to promote local manufacturing and access to vaccines, medicines and other health technologies in Africa". Critical elements for successful technology transfer in Africa were highlighted, including having a conducive ecosystem backed by strong political commitment, partnerships and explicit policies for technology transfer in the region.

Gavi Vaccine Investment Strategy (VIS)

In December 2023, the Gavi Board approved the **shortlist of new vaccines** to be further assessed for possible inclusion in the 2024 Gavi Vaccine Investment Strategy (VIS)²⁹. The VIS identifies the vaccines that will be included in the next iteration of the Gavi strategy, Gavi 6.0, due to be launched in 2026.

The VIS 2024 shortlist for routine immunization includes vaccines against **TB, Shigella, group B Streptococcus (GBS)** and **dengue**, as well as **COVID-19** in priority populations. The shortlist for global stockpile development includes vaccines for **chikungunya, hepatitis E virus and mpox**. For vaccines still under development, a condition of inclusion in the shortlist is an indication that they might reach authorization before 2030.

More detailed analyses of shortlisted vaccines and investment cases will be assessed by the Gavi Board in June 2024.

27 <https://www.gavi.org/vaccineswork/african-vaccine-manufacturing-accelerator-what-and-why-important>

28 [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(23\)01119-4/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(23)01119-4/fulltext)

29 <https://www.gavi.org/news/media-room/initiatives-african-vaccine-manufacturing-approved-gavi-board>

Managing success

The number of diseases preventable by vaccination continues to rise. When founded in 1974, the Expanded Programme on Immunization included vaccines against seven diseases; in 2024, this has now risen to globally recommended vaccines against 13 diseases. In addition, vaccines are available for targeted or regional use for more than 17 other diseases, and this will likely rise even further by 2030.

Although this is reason to celebrate, it also raises significant challenges – including the capacity of national immunization programmes to support new vaccines, the number of vaccines now available and complexity of vaccine schedules, the increasing age range of vaccine recipients and the growing need for a life-course approach to vaccine delivery, and caregiver acceptability of multiple vaccinations in a single visit. The financial implications for countries facing increasing demands on domestic budgets also need to be considered.

These challenges highlight a key need to build country capacity for decision-making on introductions and scale-up, as part of broader health sector planning, allocation and budgeting processes. This includes strengthening the capacity of **National Immunization Technical Advisory Groups (NITAGs)** to provide independent technical advice to inform decision-making and highlights the importance of robust development of National Immunization Strategies.

“ These challenges highlight a key need to build country capacity for decision-making on introductions and scale-up ”



WHO/Arrete/Maxime Fossat



WHO/Michael Duff

SECTION 5

RISING TO THE CHALLENGE

National, regional and global efforts are focusing on a set of near-term challenges, including maintaining the momentum of catch-up activities, tackling the surge in vaccine-preventable disease outbreaks, and driving forward introduction and scale-up of HPV vaccination.

National Immunization Strategies

Following the launch of new guidance in 2021, countries are developing **National Immunization Strategies (NIS)** as they come to the end of their current multiyear planning process¹. An NIS sets out a country's immunization priorities aligned with IA2030. By the end of 2023, 30 countries had developed National Immunization Strategies, with a further 28 countries anticipated to have completed development by the end of 2024.

NIS development is being coordinated at the regional level, drawing on global guidance and costing approaches developed by WHO and UNICEF. The WHO Eastern Mediterranean and South-East Asia Regions, for example, have been organizing webinars in 2024 for countries embarking on the NIS development process, while the African Region has organized capacity-building workshops. Countries are also being encouraged to integrate NIS development and budgeting within the wider context of national health budgets and planning. Webinars are linked to the Immunization and Primary Health Care Framework for Action developed by the IA2030 Working Group for Strategic Priority 1².

In 2024, global efforts will focus on learning lessons from progress to date, in particular to gain a deeper understanding of national prioritization processes. This will include improving understanding of the role played by **National Immunization Technical Advisory Groups (NITAGs)** in strategic planning processes and prioritization of new vaccine introductions, as well as the actions needed to ensure that NITAGs can play a more integrated role in the development of national strategies and plans, as expert independent advisory bodies.

1 [https://www.who.int/teams/immunization-vaccines-and-biologicals/vaccine-access/planning-and-financing/nis#:~:text=It%20is%20a%20streamlined%20planning,strategic%20period%20\(5%20years\).](https://www.who.int/teams/immunization-vaccines-and-biologicals/vaccine-access/planning-and-financing/nis#:~:text=It%20is%20a%20streamlined%20planning,strategic%20period%20(5%20years).)

2 <https://www.technet-21.org/en/community/discussions/framework-for-action-immunization-for-primary-health-care-phc>

Regional responses

Post-COVID catch-up planning is being supported at the regional level, coordinated in most regions by **Regional Working Groups** with representation from key partner organizations. In addition, **Regional Immunization Technical Advisory Groups (RITAGs)** are typically playing a key role in reviewing regional and national progress, interpreting global policy guidance from the **Strategic Advisory Group of Experts on Immunization (SAGE)** for regional contexts, and advising their respective WHO Regional Offices on development of national programmes.

Regional Working Groups, partners' Regional Offices and RITAGs have been supporting and advising on **catch-up activities** in countries. An important policy shift in recent years has been extension of immunization to older ages (generally up to age 5 years) to catch up missed children. Big Catch-Up activities have often involved intensification of these routine activities, alongside one-off and opportunistic campaigns and outreach.

Several countries have experienced great success in reducing the numbers of zero-dose children. This has typically been based on high levels of **political commitment**, adoption of **targeted and tailored approaches** in priority subnational geographies, and strong **accountability frameworks**, backed up by support from global and regional partners.

Ongoing challenges include multiple territories affected by **conflict**, political instability and humanitarian crises, challenging post-pandemic **financial contexts**, and widespread disease **outbreaks**. Monitoring of catch-up activities outside traditional age ranges is a further challenge, although new tools are becoming available, including electronic immunization registries and other digital tools.

Key regional priorities include improving the availability and quality of **subnational data** to support prioritization of efforts to tackle equity gaps. There is also a critical need to strengthen effective vaccine-preventable disease **surveillance platforms**, to support timely outbreak responses, inform routine immunization activities and optimize schedules.

“ An important policy shift in recent years has been extension of immunization to older ages (generally up to age 5 years) to catch up missed children ”



WHO/Michael Duff

WHO African Region

Recovery in the African Region has been slower than in other parts of the world. Multiple natural disasters, widespread sociopolitical instability and outbreaks, alongside chronic resource shortages, have slowed down efforts to rebuild and strengthen national immunization programmes.

The numbers of **zero-dose children** in the region have increased each year since 2019. Big Catch-Up activities have focused on 14 countries with a high proportion of zero-dose and under-immunized children and low coverage levels³. With input from two Regional Working Groups covering different geographies, a range of strategies are being applied, including supplementary immunization activities (SIAs), integration of immunization services with other health interventions, periodic intensification of routine immunization (PIRI), and extended outreach, with a particular emphasis on strengthening routine immunization service delivery to traditionally underserved populations.

Guidelines for **monitoring activities** have been developed, with a growing emphasis on use of GIS-based tools and digitalization. Strong efforts are being made to update national policy on age criteria for immunization, to ensure vaccination of missed children beyond the age of 2 years. However, mechanisms for capturing data from this group are currently limited. Catch-up continues to be a priority throughout 2024, with tailored approaches in 14 priority countries according to their local context and needs. In addition, other countries have been supported to use various opportunities to conduct catch-up activities.

In November 2023, the African Regional Immunization Technical Advisory Group (RITAG) recommended that countries in the region revise policies to expand age eligibility, and integrate catch-up vaccination into routine immunization programming as an ongoing "safety net" to prevent accumulated immunity gaps. Countries have been supported to include catch-up vaccination in costed NIS plans and in vaccine forecasting, with the aim of making catch-up vaccination an integrated routine activity to improve coverage and reduce the number of children missing vaccination.

WHO Eastern Mediterranean Region

The Eastern Mediterranean Region has a diverse mix of countries, including seven Gavi-eligible countries and multiple countries affected by conflict and political instability. In the past two years, all countries in the Region have been affected by measles outbreaks, particularly Pakistan and Yemen.

Extensive Big Catch-Up activities have been coordinated by the Regional Working Group. Following a **situational analysis and policy review** in August 2023, a planning template and forecasting tool were developed, and potential sources of funding identified.

³ Angola, Cameroon, Central African Republic, Chad, DRC, Ethiopia, Guinea, Madagascar, Mali, Mozambique, Niger, Nigeria, South Africa and Tanzania.

Catch-up strategies are focusing mainly on reducing missed opportunities for vaccination and extending outreach services. Identifying zero-dose and under-immunized children remains a major challenge, particularly in fragile settings with highly mobile populations, as is reaching children in areas not under government control.

A key message being communicated through the region is that **catch-up is anticipated to be a continuous process**, not a one-off campaign. Health workers and caregivers are being encouraged to view childhood immunization as an activity that continues at least to the age of 5 years, if necessary. The importance of completing vaccination schedules is also being emphasized. New tools have been developed to capture data from non-traditional age groups.

WHO European Region

The European Region has also been affected by major conflicts, which contributed to a dip in DTP3 coverage that was partially reversed in 2022. A resurgence in measles cases has also been seen, with a 62-fold increase in the number of cases in 2023. In 2023, measles cases were concentrated in the region's middle-income countries.

Practical guidance has been developed for catch-up activities⁴. The focus of Big Catch-Up activities has mainly been on intensifying catch-up activities that are already embedded in national programmes, targeted catch-up in particular populations, or SIAs. Catch-up and outbreak response activities are integrated whenever possible. In 2022, 3.8 million children aged 12 months to 15 years received measles vaccine, although this has yet to feed through into reduced case numbers.

A strong regional focus has been the **availability of data at sub-district level**, for example to support targeting of catch-up activities and to assess the equity of service delivery. Closing subnational immunity gaps is a regional priority. Consultations are planned to discuss how subnational monitoring can contribute to review of programme performance, monitoring of vaccination across the life-course, and coverage monitoring standards.

WHO Region of the Americas

Coverage levels in the region were in decline even before the COVID-19 pandemic, with DTP3 having peaked at 94% coverage in 2011. Some recovery was seen in 2022, including a drop in the numbers of zero-dose children, particularly in Brazil and Mexico; the numbers of zero-dose children in the region as a whole are now significantly below 2019 baseline levels. Annual vaccination week activities have played an important role in closing immunity gaps.

⁴ <https://www.who.int/europe/publications/i/item/WHO-EURO-2022-4751-44514-63005>

The numbers of measles outbreaks in the region declined in 2023 compared to 2022. However, the region remains at risk of importations of cases of vaccine-preventable diseases such as measles and cVDPVs.

A Regional Immunization Action Plan, aligned with the global IA2030 strategy, has been developed through extensive country consultations and will be implemented beginning in 2024. New approaches are being developed to strengthen catch-up activities, including use of **GIS tools** to improve estimates of population size and to support microplanning, which are being piloted in four countries. **COVID-19 vaccination** is being integrated into routine immunization, and a monitoring tool has been developed to support **self-assessment of national immunization programmes**⁵. The tool generates an assessment of a programme's current maturity level and helps programmes generate action plans to strengthen their capacities and performance.

WHO South-East Asia Region

Following years of strong progress, the COVID-19 pandemic had a major impact in the region, leading to a sharp increase in the numbers of zero-dose children and a large drop in DTP3 coverage. These were reversed in 2022, with DTP3 coverage returning to pre-pandemic levels (91%) and zero-dose children numbers also close to baseline levels, with substantial reductions seen in India and Indonesia.

These gains were underpinned by a range of strategies, including policy reviews, multiple strategic interventions within countries, adoption of lessons learned during the pandemic, and effective collaborations with partners.

In mid-2023, **capacity reviews** of national immunization programmes within the region were undertaken, to inform country-specific development plans. These were reviewed by the RITAG and are subject to periodic review by the Regional Working Group.

A wide range of **Big Catch-Up activities** have been undertaken, with more than 25 million vaccine doses delivered in 2021–2023 to children at different ages through campaigns. Particularly strong progress has been made in **India**, where a national initiative focused on immunization of missed children aged 0–5 years and pregnant women, particularly in underserved communities. Priority districts were identified based on local coverage. Targeting has been backed up by a strong accountability framework at multiple levels and close cross-sectoral engagement. In total, 5.5 million children and 1.32 million pregnant women were reached in 2023, including 200,000 zero-dose children.

Despite this progress, several countries have been affected by **measles outbreaks** due to accumulation of under-protected children, including India, Indonesia, Nepal and Sri Lanka.

⁵ <https://www.paho.org/en/topics/immunization/performance-monitoring-tool-national-expanded-program-immunization>

WHO Western Pacific Region

The Western Pacific Region has demonstrated remarkable resilience in recovering from the pandemic. Although DTP3 vaccination coverage declined to 91% in 2021, it rebounded to 94% in 2022, reaching the same level as the baseline year of 2019. In 2022, there were 1 million zero-dose children across the region, a return to the 2019 baseline level. Notably, 84% of these zero-dose children were concentrated in just three countries, with the Philippines accounting for 63% of this vulnerable population. In 2023, the region was affected by measles, and diphtheria outbreaks were reported in three countries.

Following declines in vaccination coverage during the early stages of the COVID-19 pandemic, catch-up activities commenced early in the Western Pacific, beginning in the third quarter of 2020 in many countries and areas. During 2022–2023, a variety of strategies were implemented to address gaps in population immunity. These included intensifying routine catch-up activities, which were tailored to meet subnational needs. In addition, national and subnational SIAs played a crucial role, reaching over 9 million children with MR vaccine in 2023 alone. Vaccine shortages have hindered routine catch-up activities in some countries, including the Philippines.

In the Philippines, tremendous efforts have been made in recent years. These include conducting national vaccination campaigns even in challenging circumstances such as the pandemic. In addition, the implementation of the tailored Last Mile Strategy and a 2-year holistic revitalization of the national immunization programme have had significant impact.

Investments and assets from the COVID-19 vaccine rollout are now being leveraged to strengthen immunization systems, with the goal of protecting more people through more life-saving vaccines.



WHO/George Jefferies

Global-level responses

Global stakeholders – global partners and IA2030 Working Groups – have responded to the latest IA2030 data by refining a Shared Action Agenda, which identifies six near-term priorities to guide action at global, regional and country levels:

- 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.

The original seven Strategic Priorities remain core to IA2030, with global and regional partners continuing to organize activities in these areas, with the ultimate aim of supporting the strengthening of immunization programmes and enhancing programme performance in countries. The Shared Action Agenda provides a small number of high-priority areas to align near-term responses to achieve rapid impact.

Two major global initiatives – the **Big Catch-Up** and **HPV Vaccine Revitalization Agenda** – address two of the Shared Action Agenda priorities.

The Big Catch-Up

The COVID-19 pandemic resulted in a decline in immunization coverage in most countries and a rise in the number of zero-dose and under-immunized children. The **Big Catch-Up initiative**, jointly developed by global IA2030 partners, has threefold aims – to **catch up** children who have missed vaccinations, to **restore** immunization coverage levels to those seen pre-COVID, and to **strengthen** immunization systems within primary healthcare to re-establish the trajectory towards IA2030 targets⁶.

In December 2023, the Gavi Board agreed to provide funding of US\$290 million to support the response to the secondary impacts of the pandemic through country catch-up, restoration and strengthening activities. Gavi-eligible countries can apply for fully financed catch-up doses for all vaccines in their existing immunization schedule, for children who missed vaccination and catch-up opportunities between 2020 and 2022. Countries also now have greater financial flexibility to reprogramme existing funding to support catch-up activities.

To ensure equitable access to vaccine stocks across countries, a **two-stage approval process** has been established, with phase 1 providing approval for vaccine quantities enabling countries to reach approximately 35% of their missed children. The first country applications were approved at the end of 2023, and implementation of activities is due to take place in 2024 and 2025.

One of the first countries to launch Big Catch-Up activities has been **Mozambique**, which has seen its number of zero-dose children rise from fewer than 100,000 in 2019 to 750,000 by 2022. As well as short-term PIRI activities to reach missed children, the country is also addressing other barriers, including customs delays on vaccine imports, and investing in its cold chain and other parts of its immunization service delivery infrastructure⁷.

In line with WHO recommendations for catch-up vaccination⁸, countries are being encouraged to develop or revise **national immunization policies** to raise age limits for routine vaccination, to ensure that children up to at least 5 years of age can be caught up with essential vaccinations.

To support these efforts, global guidance has been developed on **monitoring of catch-up activities**⁹ – most immunization data systems in routine use do not have the capacity to record vaccinations outside the usual age range of birth to two years. The guidance outlines options that countries can take to track delayed vaccination and how they can adapt data systems for ongoing monitoring of catch-up vaccination.

⁶ <https://www.who.int/publications/i/item/9789240075511>

⁷ <https://www.gavi.org/vaccineswork/mozambiques-grand-plan-reach-over-750000-unimmunised-children-2024>

⁸ <https://www.who.int/teams/immunization-vaccines-and-biologicals/essential-programme-on-immunization/implementation/catch-up-vaccination>

⁹ <https://www.technet-21.org/en/resources/guidance/monitoring-and-reporting-of-essential-immunization-catch-up-in-the-context-of-the-big-catch-up#:~:text=Monitoring%20the%20Big%20Catch%2DUp%20is%20vital%20to%20close%20immunization,country%20partners%2C%20and%20global%20stakeholders%20>

Longer-term aims of the Big Catch-Up include expanding the age range of policies in line with a life-course approach, improving health information systems to better monitor vaccination of older children, and applying innovative strategies to reach and vaccinate missed children and communities, in order to build programme resilience to better withstand future shocks.

Human papillomavirus (HPV) vaccination

HPV vaccination is central to the global strategy to eliminate cervical cancer as a public health concern¹⁰. Achieving global targets by 2030 will avert an estimated 62 million deaths over the next century. HPV vaccination also illustrates the power of vaccination to save lives across the full life-course.

Confirmation of the high efficacy of single-dose HPV vaccine led to a WHO recommendation on single-dose vaccine use in 2022. The consequent reduced costs and enhanced programmatic feasibility led to a surge of interest in HPV vaccination, and prompted the launch of the **HPV Vaccine Revitalization initiative** by Gavi, the Vaccine Alliance in 2023, which increased HPV vaccine funding by 30% to US\$600 million.

The initiative has the ambitious target of vaccinating 86 million girls by the end of 2025. In 2023, six countries introduced HPV vaccination into their immunization schedules, four multi-age cohort campaigns were organized, and four new applications for HPV introduction were approved.

The Alliance and other IA2030 partners are providing countries with technical assistance and system strengthening support to develop applications, manage launches, and improve coverage. A US\$15 million learning agenda has also been launched.

This momentum will be maintained through 2024 and 2025. Five new launches and eight multi-age cohort campaigns are planned for 2024; 11 applications to Gavi are under review and 16 launches are planned. In 2025, 28 countries plan to implement a new launch or a multi-age cohort campaign. Advocacy is prioritized for India, a high-priority country due to the potential to reach 70 million adolescent girls. Progress may be held back by limited supplies of HPV vaccine, although promotion of the single-dose strategy should enable more girls to be protected.

¹⁰ <https://www.who.int/publications/i/item/9789240014107>



WHO/Michael Duff

Shared Action Agenda

The responses of global partners represented on the IA2030 Coordination Group to the other four priority areas of the Shared Action Agenda are summarized below. More details are provided in Annex 3.

2. PROMOTING EQUITY

Funders such as Gavi and the World Bank are directing resources towards the least-developed countries, with a focus on strengthening immunization and primary healthcare systems. Their aim is to address equity gaps by improving the delivery of services to under-served populations. Global partners are supporting these efforts and country activities to reach zero-dose children, by addressing both supply- and demand-side barriers and through efforts to build the evidence base on the most effective strategies for reaching zero-dose children and under-served populations.

3. REGAINING CONTROL OF MEASLES

Keeping measles in check requires both effective outbreak responses as well as building population immunity through vaccination. Global partners have been supporting the planning, delivery and monitoring of outbreak responses as well as efforts to improve campaign effectiveness, including through more efficient campaign integration. The supply and availability of vaccines and enhanced surveillance through the measles and rubella laboratory surveillance network are also core areas of partner support.

In addition, a multi-partner **Outbreaks Task Team**, established by the IA2030 Partnership Council, has conducted an In-Depth Review on improving vaccine-preventable disease outbreak prevention, preparedness, detection and response. This analysis generated concrete recommendations on practical steps that global partners and other stakeholders could take to address the rising tide of measles and other vaccine-preventable disease outbreaks.

4. MAKING THE CASE FOR INVESTMENT

Global partners have been undertaking a range of advocacy activities to promote country and international investment in immunization and primary healthcare. In 2023, these included events at the United Nations General Assembly (UNGA) and G7 and G20 events. The focus for 2024 is the **EPI@50 "Humanly Possible" campaign**, which celebrates the achievements of 50 years of the Expanded/Essential Programme on Immunization and the millions of lives saved in this period.

5. ACCELERATE NEW VACCINE INTRODUCTIONS

Multiple vaccine introductions were delayed during the COVID-19 pandemic. Global partners are working with countries to restart introduction programmes, and providing assistance to countries introducing new vaccines. Facilitating introduction of **malaria vaccination** is a major focus during 2024. Another important focus has been building country capacity to undertake evidence-based decision-making around the prioritization of vaccine introductions, for example through strengthening of NITAG capabilities.

Research and innovation

IA2030 Strategic Priority 7 (research and innovation) is a broad cross-cutting priority area, with a strong global focus. Many partners are working to maintain the pipeline of new vaccines and vaccine-related technologies (see Section 4). In addition, efforts are being made to facilitate **greater use of evidence** to support decision-making at the national level, and to **leverage the power of innovative new tools and practices** in countries.

SP7 Working Group 2024 priorities and key activities

Facilitating **needs-based innovation** to meet community needs

Planned In-Depth Review: Developing an immunization research classification framework

Planned In-Depth Review: Understanding current approaches for identifying evidence gaps in countries

Facilitating **operational and implementation research** at the country level.

Building **capacity to enable innovation**

Facilitating the development of **new products, services and practices**.



WHO/Fanjan Combrink

Connecting and communicating

Bodies such as the **Geneva Learning Foundation** and **TechNet-21**, and tools such as the **IA2030 Scorecard**, aim to support sharing of knowledge and experience among immunization practitioners and decision-makers.

The Geneva Learning Foundation

The Geneva Learning Foundation has established a "**Movement for IA2030**", through which immunization practitioners pledge to support each other in efforts to extend the reach of immunization locally and achieve global IA2030 goals. The Movement is one manifestation of the IA2030 call for consultative engagement across IA2030 stakeholders and levels. Members are mostly in the Global South, working at subnational levels, and affiliated to ministries of health.

Activities in 2023 included "Teach to Reach: Connect" events, supported by UNICEF and other partners, at which immunization practitioners shared experiences across a range of key areas, including promoting confidence in human papillomavirus (HPV) vaccine, reaching zero-dose children in urban settings, and vaccination in humanitarian settings.

Multiple impact case studies were also released¹¹, demonstrating how participating in a peer learning programme, and gaining access to colleagues worldwide facing similar challenges, has helped a range of practitioners achieve remarkable immunization gains. Examples from Burkina Faso, Côte d'Ivoire, Ghana and elsewhere illustrate how practical ideas can be "traded" between settings by local practitioners looking for simple and practical ways to improve programme performance.

TechNet-21

The **TechNet-21 website** has established an important role as a trusted source of information for people working within immunization programmes. Launched by WHO and UNICEF, its Knowledge Hub includes thousands of resources, reports and guidance across key areas of immunization practice¹².

TechNet-21 also seeks to connect immunization practitioners, contributing to consultative engagement, through online groups and forums focused on specific areas of immunization system management. In October 2023, the **17th TechNet Conference** took place in Panama City, Panama, where more than 300 immunization professionals from over 70 countries convened to discuss critical issues in immunization programme management¹³. For the first

time, the TechNet Conference was organized around the IA2030 Strategic Priority framework and focused on how immunization programmes can best help to achieve IA2030 goals.

During 2023, an external review of TechNet-21 was undertaken to consider how it can further complement IA2030, informing a revised strategic plan to guide the development of TechNet-21 in the IA2030 era.

IA2030 Scorecard

The **IA2030 Scorecard** provides an attractive and interactive graphical representation of **IA2030 indicator data** relating to the seven IA2030 Impact Goals and 15 Strategic Priority indicators¹⁴.

Additional ways of viewing the data are now available, including breakdowns by WHO and UNICEF region and by country income category. For a selection of countries, detailed "**country profile**" pages are in development, providing a way to explore detailed country-specific trends.

These tools are designed to provide **accessible insights into key immunization indicators**, to support analysis of trends at regional and global levels, country benchmarking, and to facilitate advocacy activities. An additional tool, an **analytic dashboard**, is also in development and will provide additional functionality for those looking to engage more deeply with IA2030 data.

“ The IA2030 Scorecard provides an attractive and interactive graphical representation of IA2030 indicator data ”

¹¹ <https://zenodo.org/communities/ia2030/records?q=&l=list&p=1&s=10&sort=newest>

¹² <https://www.technet-21.org/en/>

¹³ <https://www.technet-21.org/en/conference/2023>

¹⁴ <https://scorecard.immunizationagenda2030.org>



WHO/Billy Miaron

SECTION 6

CHALLENGES AND OPPORTUNITIES

The end of the decade is 6 years away. What are the longer-term factors that could disrupt efforts to achieve IA2030 targets – or help to deliver a step-change in progress?

In recent years, immunization (and healthcare more generally) has been dominated by a COVID narrative – how the COVID-19 pandemic has undermined immunization (and other health services) and how this damage is being progressively reversed. Now there are signs that the corner has been turned, attention can again be given to the concerns that pre-dated COVID-19 or have emerged since.

The IA2030 strategy highlighted **climate change** as an emerging challenge with significant implications for infectious diseases and immunization. Emerging signs are that the impact of climate change will be every bit as great as feared – and is arriving earlier than anticipated. A recent World Bank analysis concluded that just five health risks – extreme heat, stunting, diarrhoea, malaria and dengue – could lead to more than 21 million additional deaths by 2050¹. Several of these five risks are now vaccine-preventable.

A July 2023 consultation with more than 1200 health and immunization practitioners in the Global South, organized by the Geneva Learning Foundation, found that many were already seeing health and social impacts of climate change in their local communities, from malnutrition to mental health². These first-hand experiences are a vivid illustration of the impacts documented in comprehensive and systematic academic analyses³.

Moreover, climate impacts on health and immunization are often **indirect** and the result of complex pathways of causation, extending well beyond effects on infectious disease epidemiology – such as damage to facilities, disruption of access, and displacement due to loss of livelihoods. These and other factors will inevitably undermine efforts to increase vaccine coverage and prevent outbreaks.

Climate change is sometimes described as a "**threat multiplier**" – its impact is not independent of other challenges but interacts with and often exacerbates them⁴. Displacement, for example, might be partly attributable to climate change alongside factors such as poverty or **fragility and conflict**: more than two-thirds of children who have not received essential vaccines live in countries that are at least partially affected by conflict⁵. The World Bank classifies 19 countries as conflict-affected and a further 20 as having institutional and social fragility⁶. Most have been affected for multiple years, and a return to normality seems unlikely – fragility and conflict is the new normal.

1 <https://www.worldbank.org/en/news/press-release/2023/12/03/health-program-protect-millions-from-climate-related-deaths-illness>

2 The Geneva Learning Foundation. (2023). Summary report. On the frontline of climate change and health: A health worker eyewitness report (1.0). From community to planet: Health professionals on the frontlines of climate change, Online. The Geneva Learning Foundation. <https://doi.org/10.5281/zenodo.10171063>

3 Romanello M, Napoli CD, Green C et al. The 2023 report of the Lancet Countdown on health and climate change: the imperative for a health-centred response in a world facing irreversible harms. *Lancet*. 2023;402(10419):2346-2394. doi: 10.1016/S0140-6736(23)01859-7.

4 <https://www.unhcr.org/news/stories/climate-change-and-displacement-myths-and-facts>

5 Ngo NV, Pemunta NV, Mulu NE et al. Armed conflict, a neglected determinant of childhood vaccination: some children are left behind. *Hum Vaccin Immunother*. 2020;16(6):1454-1463. doi: 10.1080/21645515.2019.1688043.

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

Maintaining immunization services in such settings is an enormous challenge. **Mass displacement** within a country or emigration of refugees exacerbates the problem. According to the UN High Commission for Refugees, by mid-2023, 110 million people were forcibly displaced, 62.2% of them internally displaced and 30.5% refugees⁷. These numbers have been steadily increasing over the past decade.

These changes are occurring within the context of continuing **economic uncertainty**. The latest version of the World Bank's "Double Shock, Double Recovery" analyses suggested that countries will continue to struggle to invest in health for years to come⁸.

As already seen in 2023, **outbreaks** of diseases such as measles and diphtheria are on the increase. At the end of January 2024, the WHO African Region alone was experiencing 101 vaccine-preventable disease outbreaks (alongside 24 humanitarian crises)⁹. Sadly, this is a predictable consequence of low vaccine coverage and the declines seen in the pandemic years.

Outbreak responses eat up time and resources that could be used to strengthen core immunization services for prevention (although they can potentially be leveraged to strengthen services). The continuing need for urgent intervention to control outbreaks will undermine long-term efforts to build stronger and more comprehensive immunization systems.

Another consequence of the COVID-19 pandemic may be a rise in levels of **vaccine hesitancy** (delay in acceptance or refusal of vaccination despite the availability of vaccination services). Vaccine hesitancy (or its flipside, **vaccine confidence**) is a complex phenomenon that touches upon individual mindset and behaviour, as well as social norms. Individually, it is generally considered to fall along a continuum from active opposition to enthusiastic support. Attitudes can be highly context-specific, and behaviours may be subject to a wide variety of influences that can mask underlying attitudes.

Although this makes hesitancy and confidence a challenging area to assess, there is some evidence that, despite saving millions of lives, COVID-19 vaccines were viewed with suspicion by many¹⁰. Meta-analyses have generated varying figures for COVID-19 vaccine hesitancy between 20% and 40%^{11 12 13}, but confidence likely varies significantly between countries and different sectors of society, and can change over time.

7 <https://www.unhcr.org/uk/mid-year-trends>

8 Kurowski C, Evans DB, Tandon A et al. From Double Shock to Double Recovery – Implications and Options for Health Financing in the Time of COVID-19: Technical Update 2: Old Scars, New Wounds. 2022. Washington DC: World Bank. Available at: <https://www.worldbank.org/en/topic/health/publication/from-double-shock-to-double-recovery-health-financing-in-the-time-of-covid-19#2>

9 <https://iris.who.int/bitstream/handle/10665/375935/OEW04-2228012024.pdf>

10 Lazarus JV, Wyka K, White TM et al. A survey of COVID-19 vaccine acceptance across 23 countries in 2022. *Nat Med*. 2023;29(2):366-375. doi: 10.1038/s41591-022-02185-4.

11 Fajar JK, Sallam M, Soegiarto G et al. Global Prevalence and Potential Influencing Factors of COVID-19 Vaccination Hesitancy: A Meta-Analysis. *Vaccines (Basel)*. 2022;10(8):1356. doi: 10.3390/vaccines10081356.

12 Mengistu DA, Demmu YM, Asefa YA. Global COVID-19 vaccine acceptance rate: Systematic review and meta-analysis. *Front Public Health*. 2022;10:1044193. doi: 10.3389/fpubh.2022.1044193.

13 Renzi E, Baccolini V, Migliara G et al. Mapping the Prevalence of COVID-19 Vaccine Acceptance at the Global and Regional Level: A Systematic Review and Meta-Analysis. *Vaccines (Basel)*. 2022 Sep 7;10(9):1488. doi: 10.3390/vaccines10091488.

COVID-19 vaccination is a special case. A key question is whether the COVID-19 vaccination experience has harmed – or, conversely, strengthened – acceptance of other areas of vaccination, particularly infant vaccination.

UNICEF's 2023 State of the World's Children report expressed concern at declining confidence in vaccination, based on an analysis of data from the Vaccine Confidence Project. For 52 out of 55 countries, confidence that vaccines are important for children declined post- versus pre-pandemic, in a handful of cases by more than 30%¹⁴. Studies in Africa have also provided some indications of declining confidence in infant vaccination following the pandemic¹⁵.

Vaccine confidence is volatile, affected by multiple factors (not least trust in health authorities) and highly context-sensitive. These numbers are a reminder that public support for vaccination cannot be taken for granted, and understanding and responding to community concerns and needs will be critical if IA2030 targets are to be achieved.

Opportunities – looking beyond immunization

The IA2030 strategy positioned immunization firmly in the context of **primary healthcare** – as a lynchpin of efforts to strengthen primary healthcare and extend universal health coverage (UHC) and as a potential beneficiary of health systems strengthening initiatives.

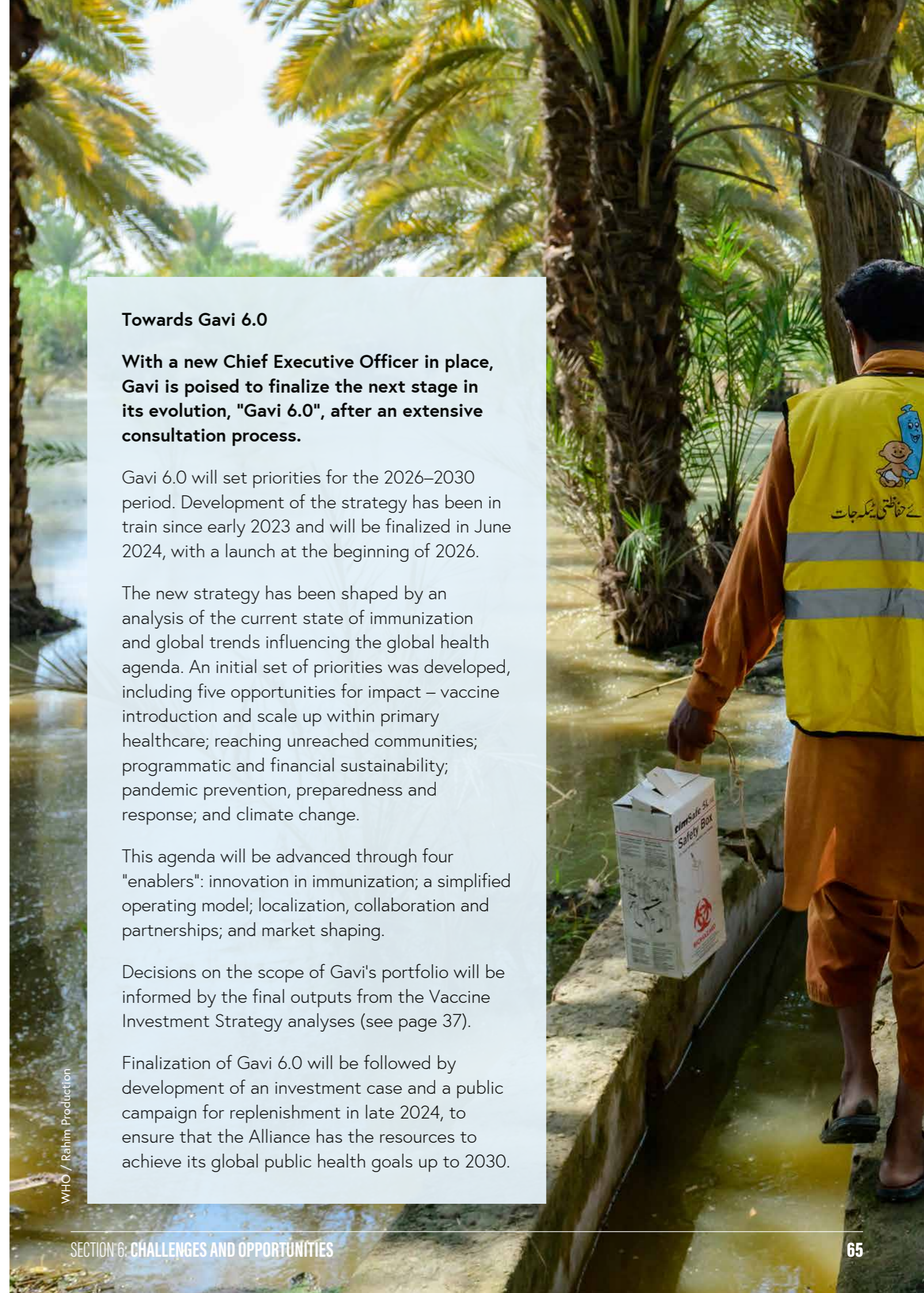
This reflects the fact that immunization is not delivered independently of other healthcare services. Moreover, there are other potential synergies to explore. **Pandemic preparedness and response** remains high on the global agenda, for example with the launch of the World Bank-hosted Pandemic Fund, the first grants from which were awarded in 2023, international commitment to the "100-Days Mission" for new pandemic vaccine development, and drafting of a global Pandemic Agreement.

There are multiple shared interests here – not least in building of **national surveillance capacities** and **laboratory networks**, and in ensuring that immunization programmes have the **capacity to equitably deliver new vaccines** in the event of a pandemic. The Global Polio Eradication Initiative (GPEI) has played a critical role in supporting polio surveillance activities which were then leveraged to build surveillance for other vaccine-preventable diseases. Transition planning must ensure that such vital infrastructure and expertise continues to support vaccine-preventable disease surveillance, wider public health goals and pandemic preparedness.

Similarly, tackling **antimicrobial resistance (AMR)** will require comprehensive surveillance systems. And, as noted above, there is growing recognition of the role that vaccination

¹⁴ <https://www.unicef.org/reports/state-worlds-children-2023>

¹⁵ de Figueiredo A, Temfack E, Tajudeen R, Larson HJ. Declining trends in vaccine confidence across sub-Saharan Africa: A large-scale cross-sectional modeling study. Hum Vaccin Immunother. 2023;19(1):2213117. doi: 10.1080/21645515.2023.2213117.



Towards Gavi 6.0

With a new Chief Executive Officer in place, Gavi is poised to finalize the next stage in its evolution, "Gavi 6.0", after an extensive consultation process.

Gavi 6.0 will set priorities for the 2026–2030 period. Development of the strategy has been in train since early 2023 and will be finalized in June 2024, with a launch at the beginning of 2026.

The new strategy has been shaped by an analysis of the current state of immunization and global trends influencing the global health agenda. An initial set of priorities was developed, including five opportunities for impact – vaccine introduction and scale up within primary healthcare; reaching unreached communities; programmatic and financial sustainability; pandemic prevention, preparedness and response; and climate change.

This agenda will be advanced through four "enablers": innovation in immunization; a simplified operating model; localization, collaboration and partnerships; and market shaping.

Decisions on the scope of Gavi's portfolio will be informed by the final outputs from the Vaccine Investment Strategy analyses (see page 37).

Finalization of Gavi 6.0 will be followed by development of an investment case and a public campaign for replenishment in late 2024, to ensure that the Alliance has the resources to achieve its global public health goals up to 2030.

can play in tackling AMR globally. The potential health and economic benefits in this area are enormous – yet another reminder of the financial common-sense of investing in immunization as a cornerstone of public health.

Coming full circle, **climate change** also has implications for both pandemics and AMR – increasing the risk of zoonotic spill-over and favouring the spread of infections, including drug-resistant infections (and potentially even releasing dangerous pathogens trapped in permafrost¹⁶).

The next 50 years

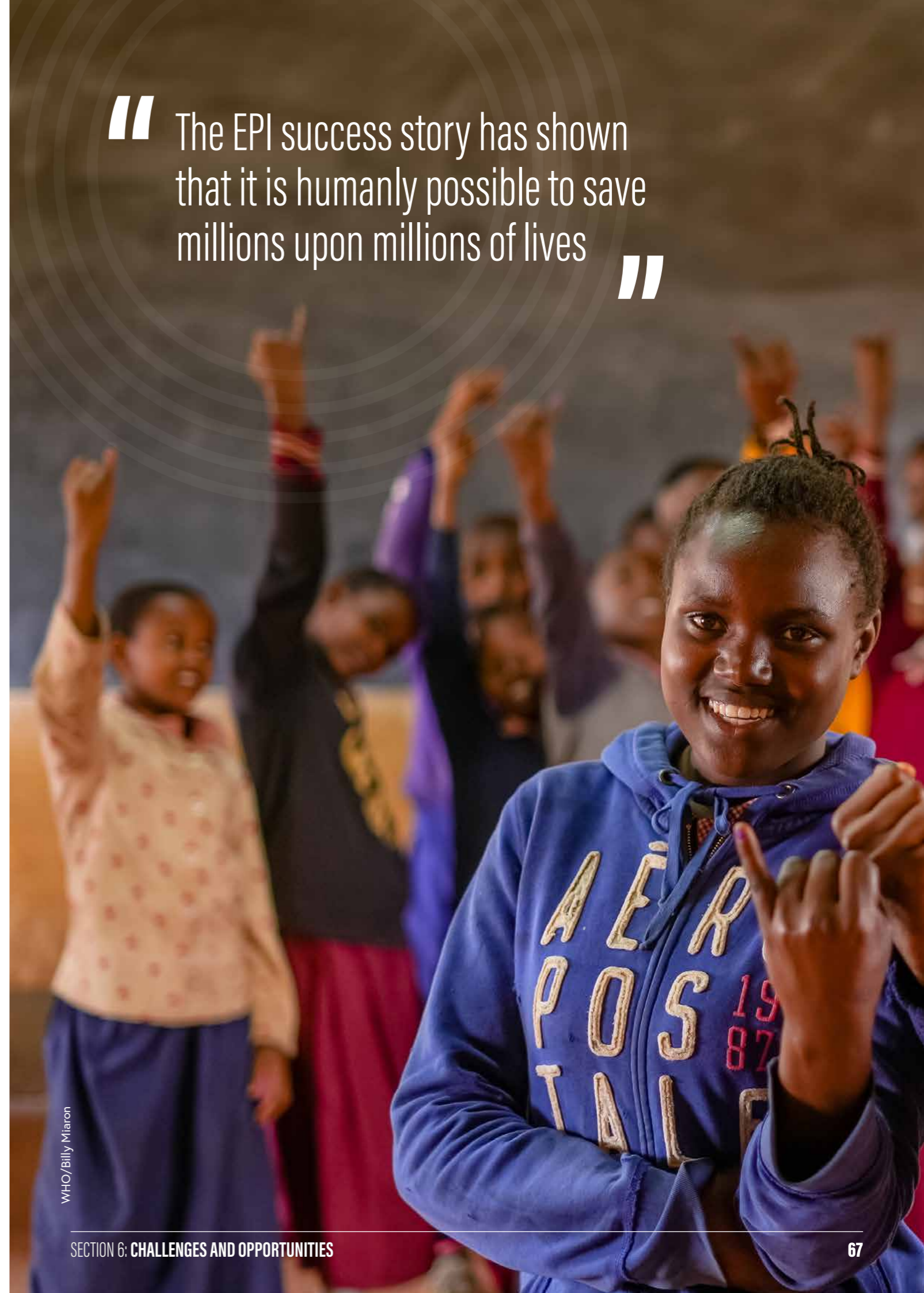
In the year of the 50th anniversary of the EPI initiative, it is worth reflecting not just on the extraordinary impact of vaccines – 154 million lives saved is an astonishing achievement – but also on what is needed to maintain this success. With the exception of smallpox (and, in the near future, polio), infectious diseases never truly go away, so vaccination is something that must be prioritized each and every year.

Human ingenuity has given us the tools to control many of the most devastating infections. The EPI success story has shown that it is humanly possible to save millions upon millions of lives. It is not just a technological success story, but a testament to political commitments and the efforts of hundreds of thousands of health workers who are dedicated to protecting their communities against vaccine-preventable diseases.

Further progress will be harder to achieve, and the challenges are formidable. Getting back on track to 2030 targets will require concerted efforts by countries, health workers, communities and households within them, and by regional and global partners. Every single death due to a vaccine-preventable disease is a tragedy, a life needlessly lost. As we collectively strive to achieve 2030's numerical targets, it is worth remembering the human stories, the joy of lives saved and the pain of lives lost, that lie behind these numbers.

¹⁶ Cohen J. Lurking in the deep freeze? Science. 2023;381(6665):1406-1407. doi: 10.1126/science.adl0420.

“ The EPI success story has shown that it is humanly possible to save millions upon millions of lives ”



WHO/Billy Miaron



WHO/Billy Miaron

SECTION 7

ANNEXES



WHO/George Jefferies

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

IMPACT GOAL	INDICATOR	2030 TARGET	2022 PROGRESS FROM BASELINE* Unless otherwise noted, 2019 is the baseline																															
1 PREVENT DISEASE	1.1 Number of future deaths averted through immunization	50 million future deaths averted in 2021-2030†	<p>12.22 M (cumulative, 2020-2022) 4.10M in 2022 (9.3% lower than annual target) 50 M</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 Although measles outbreaks are shown as a declining trend, this is because the number of countries affected by measles outbreaks in 2018-2020 (the baseline period) was very high.	<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
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2 PROMOTE EQUITY	2.1 Number of zero-dose children	50% reduction in number of zero-dose children	<p>6.2 M (2030 target) 2019 12.9 M 2022 14.3 M 1.4M (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>237 (cumulative) 47% of target 500 2030 target</p> <p>COVID-19, 2020-21: 45 Routine, 2020-21: 192 Routine, 2022: 45</p>																															
3 BUILD STRONG IMMUNIZATION PROGRAMMES	3.1 Vaccination coverage across the life-course	90% coverage of full course for selected vaccines	<table border="1"> <thead> <tr> <th>Vaccine</th> <th>2019</th> <th>2022</th> </tr> </thead> <tbody> <tr> <td>DTP3</td> <td>86%</td> <td>84%</td> </tr> <tr> <td>MCV2</td> <td>71%</td> <td>74%</td> </tr> <tr> <td>PCV3</td> <td>51%</td> <td>60%</td> </tr> <tr> <td>HPVc</td> <td>14%</td> <td>15%</td> </tr> </tbody> </table> <p>90% (2030 target)</p>	Vaccine	2019	2022	DTP3	86%	84%	MCV2	71%	74%	PCV3	51%	60%	HPVc	14%	15%																
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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>No. of regions: 5 (1 increase, 4 decrease) No. of countries: 71 (68 increase, 3 decrease)</p> <p>2021 change from baselines, Increase (blue), No change (grey), Decrease (red)</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.

Annex 2: Strategic Priority (SP) indicators and 2022 data*

STRATEGIC PRIORITY	INDICATOR	2022 DATA
1 IMMUNIZATION PROGRAMMES FOR PRIMARY HEALTH CARE AND UNIVERSAL HEALTH COVERAGE	1.1 Proportion of countries with evidence of adopted mechanism for monitoring, evaluation and action at national and subnational levels	Data not yet available
	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>

STRATEGIC PRIORITY	INDICATOR	2022 DATA
6 SUPPLY & SUSTAINABILITY	6.1 Health of vaccine markets, disaggregated by vaccine antigens and country typology	Healthy: 4: BCG, PCV, penta, tetanus–diphtheria Concerning: 6: Measles–rubella, measles–mumps–rubella, IPV, rotavirus, cholera, yellow fever Unhealthy: 2: HPV, hexa
	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 not yet available

* Table only includes SP objectives for which global indicators have been specified.

† Indicators based on new eJRF questions. Data have limitations due to novelty of the indicators and ability of countries to report on them. Questions (and possibly the indicator) 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.

Annex 3: Global partner responses to the Shared Action Agenda

The information below summarizes the responses from key global partners to the Shared Action Agenda, including those represented on the IA2030 Coordination Group. This list is not comprehensive – many equally valuable contributions are being provided by numerous other development partners in these areas. The purpose of this summary is to highlight opportunities for alignment and coordination, while also showing potential gaps where greater support and focus is needed. Other organizations are encouraged to share summaries of relevant activities to enhance a shared understanding of the global support landscape and foster improved collaboration.

IA2030 Global Partners represented on IA2030 Coordination Group

BMGF: Bill & Melinda Gates Foundation

CDC: US Centers for Disease Control and Prevention

Gavi: Gavi, the Vaccine Alliance

Gavi CSO constituency: Representing civil society organizations in Gavi-eligible countries

GPEI: Global Polio Eradication Initiative

IFRC: International Federation of the Red Cross and Red Crescent Societies

UNICEF: United Nations Children's Fund

Wellcome: Wellcome Trust

WHO: World Health Organization

IA2030 Working Groups

IA2030 Working Groups comprise technical experts in specific areas of immunization. They have been set up to carry out analyses (known as **In-Depth Reviews**) and provide expert technical advice to immunization decision-makers at all levels. Working Groups have been set up around the seven IA2030 Strategic Priorities (**SPs**), although some have cross-cutting remits:

SP1/3/4: Equitable immunization programmes across the life-course

SP2: Commitment and demand

SP5: Fragile, conflict and humanitarian settings

SP6: Supply security and financing

SP7: Research and innovation

C&A: Communications and advocacy

DSU: Data strengthening and use

DSI: Disease-specific initiatives

M&E: Monitoring and evaluation

MICs: Middle-income countries

M&RP: Measles and Rubella Partnership

1. CATCH-UP AND STRENGTHENING

Global partners

- **Joint activities:** Implementing the Big Catch-Up initiative (see above).
- **Joint activities:** Advancing "Smart Guidelines" to promote common software standards for supply chain systems.
- **BMGF:** Funding for projects aiming to link Big Catch-Up activities to planned polio and measles activities.
- **BMGF:** Funding of immunization system strengthening in subnational areas of 10 polio high-risk geographies.
- **CDC:** Investments and technical assistance, mostly to certain high-priority countries (Brazil, DRC, Ethiopia, Indonesia, Nigeria and the Philippines), to build programme capacity and improve reach to missed communities.
- **GPEI:** Implementing activities to interrupt the transmission of wild poliovirus in the two remaining endemic countries, Afghanistan and Pakistan, and of cVDPVs in multiple countries.
- **GPEI:** Promoting inclusion of bivalent OPV (bOPV) in country applications for Big Catch-Up support.
- **IFRC:** With Afghanistan Red Crescent, continuing polio and measles catch-up activities in Afghanistan; in 2024, catch-up activities are planned in Mali with Mali Red Cross, DRC with the Red Cross of the DR Congo, and the Philippines with the Philippine Red Cross.
- **USAID:** Funding of projects providing technical assistance and operational support for the Big Catch-Up in partner countries.
- **USAID:** Funding of immunization systems strengthening at national and subnational levels in public and private sectors.
- **USAID:** Funding of technical assistance projects in 33 countries and intensified support for catch up and strengthening in Nigeria, DRC and Mozambique.

Working Group 2024 priorities and key activities

SP6: Ensuring vaccine supply is sufficient to meet needs of catch-up activities.

Planned In-Depth Review: Analysis of pentavalent vaccine supply during 2024

DSU: Facilitating monitoring of Big Catch-Up activities

Completed In-Depth Review: Guidance on monitoring catch-up activities

2. PROMOTING EQUITY

Global partners

- **Joint activities:** Accelerating development of MAPs to facilitate delivery to hard-to-reach populations.
- **BMGF:** Providing implementation support to multiple countries funded through the Gavi Equity Accelerator Fund (EAF).
- **BMGF:** Project funding for activities to reduce zero-dose children numbers in areas of DRC, Ethiopia, India, Kenya and Pakistan.
- **BMGF:** Funding to Pakistan, through the World Bank National Health Support Programme, to strengthen quality and equitable delivery of primary health services (with Gavi, Global Fund and Global Financing Facility).
- **CDC:** Helping local partners identify and reach underserved populations in priority countries.
- **CDC:** Supporting integration of polio vaccination and other health services in wild poliovirus endemic countries.
- **CDC:** Supporting country efforts to reduce barriers and increase vaccine confidence.
- **CDC:** Supporting country efforts to apply gender-responsive approaches to increase vaccine uptake.
- **Gavi:** Providing US\$600 million EAF and HSS funding with 83% of applications approved and 45% of funding dedicated to identifying and reaching zero-dose children; a priority for 2024 is supporting implementation of these projects.
- **Gavi:** Supporting 75 zero-dose country learning initiatives, plus a further 20 led by Gavi partners, exploring use of the IRMMA (identify, reach, monitor, measure, advocate) framework.
- **GPEI:** Targeting of polio vaccination activities at persistently missed and marginalized communities in high-risk geographies.
- **IFRC:** Working with Central African Republic (CAR) to increase the number of facilities offering vaccination by 26% between 2022 and 2023.
- **IFRC:** Partnering with the Pakistan Red Crescent to reach remote communities in multiple districts in Pakistan; in 2024, joint activities are planned in Afghanistan, CAR, DRC, Mali, Pakistan and the Philippines.
- **UNICEF:** Organizing a Demand Hub meeting in 2023 for countries in Africa with most

zero-dose children, to discuss barriers and potential interventions, with support being provided to countries to introduce prioritized interventions.

- **UNICEF:** Providing training in human-centred design, to support co-design of gender-responsive plans with communities.
- **USAID:** Funding of projects for technical assistance to identify zero-dose children, understand root causes, and reach such children in 33 partner countries.
- **Wellcome:** Supporting TGLF's "Movement for IA2030" peer learning platform, connecting and empowering frontline immunization practitioners, including efforts to reach under-immunized children.
- **WHO:** Disseminating multiple new guidance documents, for example on catch-up activities, gender-sensitive immunization programmes, and application of behavioural and social drivers (BeSD) approaches.
- **WHO:** Facilitating R&D on approaches that will increase equitable vaccine coverage, such as microarray patches, improved thermostability and novel combination vaccines.
- **World Bank:** The Health, Nutrition and Population Global Practice supports equity-oriented primary health care and universal health coverage through an active portfolio of more than 200 projects across 100 countries, valued at US\$35.4 billion (as of February 2024).

Working Group 2024 priorities and key activities

SP2: Supporting malaria vaccine introduction.

SP2: Demand Hub meeting for countries with large numbers of zero-dose children.

SP2: Promoting behavioural and social drivers (BeSD) approaches.

SP5: Promoting immunization in conflict, fragile and humanitarian settings.

Planned In-Depth Review: Estimating coverage in humanitarian settings using existing data sources

SP6: Encouraging sharing of vaccine pricing data to ensure market transparency.

Planned In-Depth Review: Analysis of efforts to increase reporting of vaccine price data during 2024

SP7: Prioritizing new vaccines and innovations with greatest public health impact.

DSU: Extending the range of tools available to help identify and reach under-vaccinated children.

DSU: Contributing to WHO guidance and training on subnational data collection and use

3. REGAINING CONTROL OF MEASLES

Global partners

- **BMGF:** Funding for programmes switching to **five-dose vials** of measles vaccine.
- **BMGF:** Project funding to build evidence on ways to **increase vaccination coverage at 9 months** (MCV2).
- **BMGF:** Providing technical assistance for **planning and monitoring measles campaigns**, including strengthening of modelling capacity in national institutions in Ethiopia, India and Nigeria.
- **BMGF:** Working with developing country vaccine manufacturers to ensure a **healthy measles vaccine market**.
- **CDC:** Providing funding and technical assistance to support catch up and campaigns in high-risk countries.
- **CDC:** Supporting country use of new technologies and data tools to identify and close measles immunity gaps.
- **CDC:** Supporting the WHO Global Measles–Rubella Laboratory Network.
- **Gavi:** Ensuring countries have the appropriate technical assistance to implement and assess **preventive campaigns**, including post-campaign coverage surveys and use of data to strengthen routine immunization.
- **Gavi:** Exploring options to support measles control activities in **middle-income countries** (for outbreak control in Gavi 5.1 and more generally in Gavi 6.0).
- **Gavi:** Working with partners to provide additional support during the **application development process**, to increase application success rates.
- **GPEI:** Working with multiple partners to **integrate delivery of additional interventions**, including measles vaccination (including large-scale campaigns in Pakistan and Somalia).
- **IFRC:** Contributing to **measles vaccination campaigns** in Afghanistan, CAR, DRC, Kyrgyzstan, Nigeria, Pakistan and the Philippines.
- **UNICEF:** Piloting **root-cause analyses of measles outbreaks** in areas of Zambia and India, to support development of action plans to address system insufficiencies.
- **USAID:** Providing technical assistance for improving routine immunization uptake in high-risk areas.

- **USAID:** Funding responses to outbreaks through UNICEF in non-Gavi-eligible countries.
- **WHO:** Providing **technical support** for supplementary immunization activities (SIAs), and mobilizing more than 50 technical officers to 28 countries through the STOP Programme (with US CDC and UNICEF).
- **WHO:** Channelling of nearly US\$30 million from **outbreak response funds** to 16 countries affected by measles outbreaks.
- **WHO:** Providing support for a measles and rubella **laboratory surveillance network**.
- **WHO:** Facilitating the accelerated development of **MR-MAPs**.

Special initiative

An ad hoc international multi-partner **Outbreaks Task Team** has been undertaking an In-Depth Review on improving vaccine-preventable disease (VPD) outbreak prevention, preparedness, detection and response. This analysis is generating concrete recommendations on the practical steps that countries, partners and other stakeholders can take to address the rising tide of outbreaks of measles and other VPDs.

Working Group 2024 priorities and key activities

M&RP: Promoting prevention of measles outbreaks.

M&RP: Promoting universal introduction of RCV and MCV2.

M&RP: Promoting innovation to close MR immunity gaps.

DIS: Facilitating country decision-making around **campaign integration**.

In-Depth Review in progress: Developing tools to support country decision-making around campaign integration

4. MAKING THE CASE FOR INVESTMENT

Global partners

Joint activities: Organizing high-level **political engagements** in 2023 associated with United Nations General Assembly, G7 and G20 events to promote Big Catch-Up activities.

BMGF: Supporting improved **PHC financing and measurement** in DRC, Ethiopia, India and Nigeria.

CDC: Supporting country generation and use of economic evidence for budgeting and planning.

GPEI: Advocating for **IPV2 and hexavalent vaccine** introductions.

GPEI: Advocating for increasing IPV1 coverage and for nOPV stockpiles for outbreak responses.

UNICEF: Organizing **regional dialogues** on primary healthcare financing, for East and Southern Africa and West and Central Africa, to explore opportunities for improving availability of resources.

USAID: Advocacy for the Big Catch-Up in G7 and G20 meetings.

WHO: Continued advocacy for public investment in vaccination product development, manufacturing and delivery.

WHO: Advancing the concept of "vaccine value", a more holistic quantification of the benefits of vaccination, to inform investment in R&D and introduction decision-making.

Working Group 2024 priorities and key activities

C&A: Coordinating an **EPI@50 advocacy campaign**, celebrating the 50th anniversary of the Expanded Programme on Immunization.

C&A: Organizing a side event at 2024 **World Health Assembly**.

C&A: Coordinating **high-level advocacy visits to countries**.

MICs WG: Tracking progress in middle-income countries and advocating for increased global support

In-Depth Review in progress: An analysis on the current status of immunization in middle-income countries

SP5: Utilizing a Gavi-supported global communication writer's network to capture **country stories for advocacy** to promote immunization in fragile, conflict-affected, or other humanitarian settings.

5. ACCELERATE NEW VACCINE INTRODUCTIONS

Global partners

BMGF & WHO: Building national capacity for **immunization decision-making** in selected countries, leveraging past work on NITAGs, NIS development, and dissemination of information and tools.

BMGF: Working with countries to facilitate introduction of **regionally important and outbreak vaccines**, including yellow fever, typhoid, multivalent meningitis and cholera vaccines.

BMGF: Helping to build more **sustainable markets** for Ebola, typhoid, meningitis and cholera vaccines.

CDC: Engaging with ministries of health and partners to restart delayed introductions and accelerate new introductions in priority countries.

Gavi: Issuing **Vaccine Funding Guidelines**, supporting countries (with partners) through the application process, and organizing briefing sessions on new vaccine programmes.

GPEI: Working with countries to facilitate introduction of nOPV2 under WHO Emergency Use Listing and supporting WHO prequalification of nOPV2.

IFRC: Supporting **malaria vaccine introductions** through national Red Cross/Crescent societies.

UNICEF: Adapting tools for **demand promotion** developed for the Malaria Vaccine Implementation Project, to support rollout of malaria vaccination¹.

UNICEF: Providing technical support to countries introducing **malaria vaccination**, with a focus on supply chain strengthening.

USAID: Project funding to support introduction, scale up and integration of new vaccines, including malaria vaccines.

Wellcome: Funding projects generating policy-relevant evidence to optimise use of **oral cholera vaccine (OCV)**.

Wellcome: Funding modelling projects to provide more holistic **assessment of vaccine value** to inform introduction decision-making.

WHO: Supporting countries with Gavi applications for introduction of **malaria and other new vaccines**.

¹ <https://www.technet-21.org/en/topics/programme-management/malaria-vaccine>

WHO: Developing and issuing **policy positions and guidance on new vaccines**, including malaria, one-dose HPV, hepatitis A and multivalent meningococcal conjugate vaccines, with guidance on dengue vaccination in preparation.

World Bank: Providing technical assistance and financing for vaccine introduction and scale-up, including for HPV and malaria vaccination. The World Bank and Global Financing Facility are together anticipated to provide support of at least US\$400m to country-led initiatives to eliminate cervical cancer over 2024–2026.

Working Group 2024 priorities and key activities

SP6: Ensuring access to WHO-prequalified vaccines.

Planned In-Depth Review: Analysis of the nature of financial barriers to vaccine introductions

6. ADVANCE VACCINATION IN ADOLESCENCE

Global partners

Joint: Implementing an "**HPV vaccine revitalization agenda**" through technical support, promoting HPV introductions, and enabling vaccination.

BMGF: Providing **technical assistance** for Gavi applications and for implementation of HPV vaccination.

BMGF: Grants for projects to improve HPV vaccine coverage among **out-of-school girls**.

BMGF: Supporting **evidence generation** on one-dose schedules.

BMGF: Enhancing **supply diversity** through engagement with developing country vaccine manufacturers.

CDC: Supporting evaluation of different HPV vaccine delivery strategies.

CDC: Supporting HPV vaccine implementation, and integration of HPV and COVID-19 vaccination, in Ethiopia and the Philippines.

IFRC: Using the secure **Thai Red Cross Biometric Authentication System (TRCBAS)** to facilitate HPV vaccination of undocumented and other migrant populations in Thailand.

UNICEF: Supporting introductions, with particular focus on planning social mobilization and social listening for high acceptance of HPV vaccines.

UNICEF: Providing US\$10 million to 21 countries to integrate HPV vaccination in **multisectoral adolescent health interventions**.

USAID: Funding of projects to provide technical assistance to introduce and scale up HPV vaccination, integrate with adolescent health and HIV programmes, and test approaches to reach out-of-school girls.

WHO: Supporting country decision-making on HPV introduction and NITAG assessment of one-dose schedules

WHO: Identifying research questions to guide an HPV vaccine learning agenda and developing an assessment tool for behavioural and social drivers of HPV vaccination.

WHO: Carrying out extensive preparatory work to lay the ground for introduction of new TB vaccines in adolescents and adults.

Working Group 2024 priorities and key activities

SP2: Supporting HPV vaccine roll-out.

Members of the IA2030 Partnership Council

Dr Bruce Aylward (Co-chair)
Assistant Director-General (Universal Health Coverage, Life Course Division), WHO

Kayla Laserson (Co-chair)
Director, Global Health Center, CDC

Dr Eleanor Nwadinobi (Co-chair)
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Samia Wazed
WHO Regional Director for South-East Asia

Dr Endie Waziri
Chair of the Gavi CSO Steering Committee (interim representative)

Front cover: Students at Guadalupe Oltepesi Primary School, Kenya, show marks on their fingers that indicate that they have been vaccinated during an oral cholera vaccination (OCV) campaign (WHO/Billy Miaron).

Version 1.2: 22 May 2024

Immunization Agenda 2030. Turning the Corner: IA2030 Global Report 2023. Available at <https://www.immunizationagenda2030.org>

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- p. 23: Manuel Almagro Rivas (polio);
- p. 24: David Goodsell (measles);
- p. 32: James Gathany (malaria), NIAID (TB);
- p. 33: NIAID (RSV);
- p. 34: NIAID (gonococcus, HIV), Dan Higgins (meningococcus).