REGAINING LOST GROUND:

IA2030 PARTNERSHIP PROGRESS REPORT 2022

IMMUNIZATION AGENDA 2030

FOREWORD

This report provides insight into the current status of immunization around the world and summarizes progress made in implementing the Immunization Agenda 2030 (IA2030), the global immunization strategy for 2021–2030.

This document summarizes:

- Immunization data for 2021, the latest year for which comprehensive validated data are available, which were published in the 2022 IA2030 Technical Progress Report.
- Preliminary data for 2022, to provide a view of likely trends during the year.
- The response of global partners and other stakeholders to the latest immunization data and plans for 2023.

2021 saw further backsliding in key immunization coverage data, in large part due to the continuing impact of the COVID-19 pandemic. In 2022, this triggered the beginnings of a concerted response to catch up on the children that missed their initial vaccinations and to regain the ground lost during 2020 and 2021. These efforts will continue through 2023 and 2024 – particularly through the "Big Catch Up" initiative to reach children missed during 2020-2022, to return coverage to at least 2019 levels, and to strengthen immunization systems within primary healthcare.

Preliminary data suggest that some ground may have been made up in 2022 – generating momentum that we must maintain in 2023 and beyond. As members of the IA2030 Coordination Group, we are committed to ensuring that our organizations work collaboratively and with other stakeholders to achieve the IA2030 objectives. We have the tools to protect children – and increasingly adolescents and adults – from potentially devastating infectious diseases, with several other promising new vaccines almost ready to be deployed. We need to ensure that they reach the people in need, wherever they are, as rapidly as possible.

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SECTION 1

EXECUTIVE SUMMARY

The Immunization Agenda 2030 (IA2030), the global immunization strategy for 2021–2030, aims to ensure that everyone, everywhere, at every age fully benefits from vaccines for good health and wellbeing.

More people benefit from immunization than any other health service. An estimated 134 million babies were born in 2022 and more than 100 million are likely to have received three doses of DTP vaccine, protecting against diphtheria, tetanus and pertussis (whooping cough). But that still leaves many millions of infants who were not fully vaccinated, and a significant proportion are likely to be "zero-dose" infants, those not receiving any essential vaccines.

Alongside multiple challenges including natural disasters, political instability and conflict, the COVID-19 pandemic has disrupted health services – including immunization – and its economic impact has exacerbated financing challenges in many countries. As detailed in the IA2030 Technical Progress Report 2022, in 2021, the latest year for which full data are available, **global DTP3 coverage fell to 81%**, 5% lower than its peak of 86% in baseline year 2019. **The number of zero-dose children rose to 18.2 million**.

The consequences of recent drops in coverage are now becoming apparent. The **number of cases of measles rose alarmingly** in 2022, reported cases doubling during the year and the number of large or disruptive outbreaks jumping from 22 in 2021 to 33 in 2022. Similarly, the number of cases of circulating vaccine-derived poliovirus (cVDPV) increased from 698 in 2021 to 830 in 2022.

Preliminary data for 2022 suggest that the corner may have been turned, with **the number of vaccine doses reported to have been administered increasing in comparison to 2021 and 2020**, suggesting 2022 coverage levels may have risen. However, vaccine usage has not yet even returned to levels seen pre-COVID, suggesting that recovery is far from complete.

Global and regional partners are working together to address immunization challenges and help countries recover lost ground. Through the **"Big Catch Up" initiative**, driven by the IA2030 global monitoring and evaluation/action cycle, partners are channelling coordinated support for **tailored country-specific recovery plans**, to accelerate catch up of those who have missed vaccination in recent years and to strengthen the foundations of immunizations systems within primary healthcare so that more children are reached in the future. Action is required in all countries, although the 20 countries with the largest numbers of zero-dose children, which account for 78% of zero-dose children globally, will be a particular focus.

At the same time, **global research and development (R&D) efforts** are continuing to bring new vaccines closer to fruition. Vaccination against malaria is already saving thousands of lives a year and more than 25 countries have expressed an interest in introducing RTS,S/AS01 – the first effective malaria vaccine and the first against a human parasitic disease. A needs-based strategy has been developed to guide distribution of limited global supplies of the vaccine. Widely implemented, the vaccine could save tens of thousands of lives a year.

Following the reversal of lockdowns, cases of **respiratory syncytial virus (RSV)**, a leading cause of death of young children, have surged. However, a highly promising vaccine may soon be available; preparatory work is beginning to ensure its timely introduction where it is needed most. As the RSV vaccine will mainly be given to expectant mothers to protect new-borns, this further emphasizes the **life-course** aspect of immunization.

The creation of an **mRNA vaccine manufacturing hub** in South Africa, linked to 15 other partner sites in low- and middle-income countries, is supporting technology transfer for this exciting new vaccine technology. Efforts are initially focused on COVID-19 but with the possibility of development and manufacturing of other regionally important new vaccines. This and other initiatives are helping to diversify vaccine manufacturing capacity, and will make a critical contribution to regional pandemic preparedness and response.

New vaccines will only achieve impact if they reach people in need. In many countries, the priority is understandably to ensure that more people gain access to existing vaccines. By strengthening immunization programmes within robust, sustainable and equitable primary healthcare systems, national, regional and global partners are working with countries to better protect the health of their populations wherever they live.

IA2030 global and regional partners met in early 2023 to discuss **how to work together more effectively** to support country-level action in pursuit of IA2030 objectives. In addition, the **Measles and Rubella Partnership** is being integrated into the IA2030 architecture, with the IA2030 Coordination Group assuming responsibility for achieving the objectives of the Measles and Rubella Strategic Framework. Addressing the alarming rise in measles cases is an urgent priority, and this integration will also help to ensure that measles responses take into the account the wider immunization context in local settings and deliver sustainable benefits to immunization programmes and primary healthcare systems more generally.

SECTION 2

INTRODUCTION

Launched in 2021, the Immunization Agenda 2030 (IA2030) has a clear vision – of a world where everyone, everywhere, at every age fully benefits from vaccines for good health and wellbeing.

No sooner had the global IA2030 strategy been developed then the world was hit by the biggest pandemic for a century – COVID-19, causing unprecedented loss of life, disruption and economic turmoil. Alongside existing challenges such as ongoing humanitarian crises, conflict and displacement, and limited resources, COVID-19 has contributed to a significant stalling in expansion of vaccination coverage.

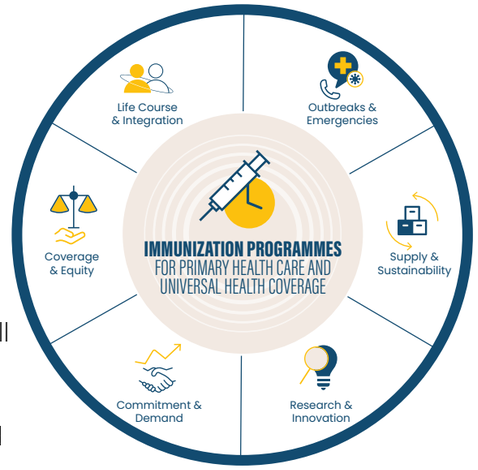
COVID-19 is now a vaccine-preventable disease, albeit one that is likely to be around for the foreseeable future. In large part, return to near-normal life is a consequence of the remarkably rapid development of efficacious vaccines against SARS-CoV-2, now available in sufficient quantities to meet global demand.

However, the recent focus on COVID-19 shifted attention and resources away from other areas of healthcare, including essential immunization. While complacency is to be avoided, there is a need to switch from "crisis mode", and to move COVID-19 vaccination onto a more sustainable long-term footing, integrated into wider immunization programme and disease-control activities.

This integration of COVID-19 vaccination into existing immunization programmes and primary healthcare will be a major challenge, particularly for countries that have limited experience of delivering vaccines to adults. Nevertheless, it offers significant opportunities to strengthen primary healthcare delivery systems and extend immunization services to new age groups, consistent with the increasingly life-course focus of immunization.

This shift also emphasizes the need to refocus attention on IA2030 goals and 2030 targets. Building on efforts begun in 2022, 2023 has been designated a "year of recovery" when the primary goal is to catch up those children that have been missed during COVID-19-affected years and to re-establish the trajectory towards 2030 targets.

This will require coordinated and concerted efforts across partners and regional bodies in support of countries. These efforts will need to be undertaken within the wider context of strengthened primary healthcare systems and the long-term goal of universal health coverage, as multiple other areas of healthcare have also been disrupted by the COVID-19 pandemic and require strengthening.



At the same time, the immunization community must look for synergies with global health agendas that are of great relevance to the future of immunization. These include the threat of **antimicrobial resistance**, where immunization can play a key role in reducing the need for antimicrobial use and in preventing drug-resistant infections, and **pandemic preparedness and response**, as vaccination will likely be central to control of newly emergent pathogens. The immunization community will also need to be part of conversations on the global impact of **climate change** and its implications for human health.

New vaccine development is critical to pandemic preparedness, but **effective preparedness** and response will also depend on multiple other immunization pillars – including surveillance, distribution platforms and community engagement, all appropriately resourced. Important lessons can be learned from the COVID-19 response to accelerate new vaccine development, to ensure greater equity in access, and to anticipate and address the delivery and demand challenges, including anti-vaccination sentiment, that can limit the beneficial impact achieved through vaccination. Key work in progress includes development of a Pandemic Accord and updating of International Health Regulations (IHR), to which the immunization community will be able to provide key inputs.

The landscape remains challenging, with many countries having multiple demands on health resources, facing economic challenges, chronic political instability and conflict, and climate-related impacts and natural disasters. Now is the moment to re-energize efforts to bring the benefits of immunization to more babies, children, adolescents and adults than ever before, guided by the IA2030 framework and its targets for the decade.

IMMUNIZATION DATA REPORTING

Annual immunization data go through an extensive collation and validation process. While this provides more reliable information, it means that data are released more than six months after the end of a reporting year.

Other data from countries provide a more up-to-date picture of immunization, although such preliminary data should be interpreted with caution as they have not been subject to the same data validation processes. These data are also typically available from only a subset of countries.

Efforts are being made to ensure that timely and "fit-for-purpose" data are available at all levels of the immunization system, including the global level, to guide decision-making and action.

SECTION 3

THE STATUS OF IMMUNIZATION IN 2021 AND 2022

SUMMARY

- **Further backsliding** in immunization coverage was seen in 2021:
    - **DTP3 coverage fell to 81%** (86% in baseline year 2019).
    - **18.2 million "zero-dose" children** did not receive DTP1 (13.3 million in 2019)
- Data from 2022 indicate that **cases of measles surged**, owing to immunity gaps arising from suboptimal coverage during the COVID-19 pandemic, with an increase also seen in cases of circulating vaccine-derived poliovirus (cVDPV).
- Preliminary 2022 data from a subset of countries indicate that the **number of vaccine doses administered increased** compared to 2021 but did not reach 2019 levels, suggesting **some recovery but not yet to pre-COVID levels.**
- **The 2021 and 2022 data point to the continuing need to recover lost ground and to strengthen immunization systems for a renewed push towards 2030 targets.**

DTP3 coverage provides a globally standardized metric for determining how well national immunization programmes are reaching new-borns during early infancy. The **numbers of zero-dose children** provide a measure of the numbers of new-borns that have not been reached at all. Because measles is highly transmissible, **measles cases** provide an early indicator that immunization coverage is inadequate, with their distribution indicating which populations are particularly under-served.

> "The 2021 and 2022 data point to the continuing need to **recover lost ground** and to **strengthen immunization systems** for a **renewed push towards 2030 targets.**

COVERAGE

2021 STATE OF PLAY:

- Coverage of two out of four indicator vaccines **(DTP3 and MCV2)** dropped between 2020 and 2021.
- Global **human papillomavirus (HPV) and pneumococcal conjugate vaccine third dose (PCV3)** coverage were unchanged, with new introductions and scale up in large countries offsetting drops in coverage elsewhere.
- **The number of zero-dose children** (children under 1 year of age not receiving DTP1) increased to 18.2 million – 37% more than in baseline year 2019.
- **Introduction of new vaccines** in low- and middle-income countries reached an all-time high because of COVID-19 vaccine introductions. Excluding COVID-19 vaccines, new vaccine introductions rose slightly in 2021 compared to 2020 but remained at historically low levels.

PRELIMINARY **2022** PICTURE:

- Preliminary monthly administrative data from 77 countries (representing 68.2% of the global surviving birth cohort) suggest that **the number of vaccine doses administered globally was higher in 2022 than 2020 and 2021, but did not return to 2019 levels**. This suggests some recovery in immunization services 2022 but not to pre-COVID levels.
- Preliminary data suggest that the **number of vaccines introduced in low- and middle-income countries in 2022 was lower than the average number of introductions seen in the last decade**; 31 introductions were reported to WHO, including 11 HPV and two PCV introductions.

OUTBREAKS & CASES

2021 STATE OF PLAY:

- Compared to the 2018–2020 baseline, the number of large or disruptive outbreaks in 2021:
    - **Increased:** Circulating vaccine-derived polioviruses (cVDPVs), wild polioviruses and yellow fever.
    - **Were stable:** Cholera and meningococcus.
    - **Declined:** Ebola viral disease (EVD) and measles.
- No visible progress has been made towards global and regional eradication and elimination targets since 2019.

PRELIMINARY **2022** PICTURE:

- The number of large or disruptive **measles outbreaks** increased to 33 in 2022, compared to 22 in 2021 (a 50% increase).
- The number of reported **measles cases** nearly tripled in 2022, to 172,084 compared with 59,990 in 2021.
- **cVDPV cases** increased from 698 in 2021 to 830 in 2022, although 80–90% of cases cluster in just four countries.
- One large or disruptive **Ebola viral disease outbreak** occurred, in Uganda.
- Distribution of vaccine from **stockpiles for outbreak control** increased in 2022 compared to 2021 for cholera, Ebola, meningococcal disease and yellow fever.

LIVES SAVED

2021 STATE OF PLAY:

- Modelling suggests that 4.0 million future deaths were averted by vaccination against 14 key pathogens in 2021.
- The number of deaths averted in 2021 was 5.6% lower than initially targeted, which will lead to an additional 240,000 future premature deaths from vaccine-preventable diseases.

PRELIMINARY **2022** PICTURE:

- Although the apparent rebound is encouraging, the **decreased immunization coverage** seen in 2021, the postponement of several vaccination campaigns, plus limited new vaccine introductions in 2020, 2021 and 2022, **raise serious questions about the feasibility of achieving the IA2030 impact goal of 50 million deaths averted without renewed and substantial additional commitment to immunization and prioritization of interventions that maximize the numbers of lives saved.**

See Annex 1 for full data on IA2030 impact goals.

POLIO

Polio remains endemic in two countries, Afghanistan and Pakistan. In 2021, four cases of wild poliovirus were detected in Afghanistan and one in Pakistan. In 2022, two cases were reported in Afghanistan and 20 in Pakistan. A further eight cases were detected in Mozambique between March and August 2022, following the detection of wild poliovirus in a child with disease onset in 2021. Both viruses found in Malawi and Mozambique stem from a virus that was circulating in endemic Pakistan in 2019 and 2020, and were restricted to single locations in each country; no additional cases were detected in response zones or elsewhere in Africa.

The changing epidemiology of polio in Afghanistan and Pakistan has raised hopes that transmission can finally be interrupted in this area. Transmission is now restricted to two out of 34 provinces in Afghanistan and six out of 180 districts in Pakistan. Transmission has been interrupted in four of the five traditional polio reservoirs. Since 2020, transmission chains have been reduced from eight to one in Afghanistan and from 11 to one in Pakistan.

Control efforts in 2023 are focusing on the remaining areas of known transmission and areas considered to be at high risk of re-establishment of wild poliovirus circulation or emergence of cVDPV due to low vaccine coverage. nOPV2, a more genetically stable version of OPV2, made available through a WHO Emergency Use Listing, is making a major contribution to outbreak responses. Almost 400 million children received

MEASLES

Achieving herd immunity for measles – preventing virus circulation by reducing the numbers of susceptible hosts – requires very high levels of vaccine coverage, around 95%. Recent years have seen worrying falls and stagnation in coverage of measles-containing vaccine (MCV), for the first and second doses (MCV1 and MCV2).

Because of large outbreaks just before the COVID-19 pandemic, past infection has contributed to relatively high levels of population immunity. However, under-vaccination in recent years has created a pool of vulnerable unprotected children, increasing the risk of explosive measles outbreaks.

In 2022, the consequences of inadequate coverage began to become apparent. Multiple countries experienced measles outbreaks and reported cases nearly tripled. Catch-up efforts and high MCV1 and MCV2 coverage are essential to tame ongoing outbreaks and reduce the risk of future outbreaks.

STRATEGIC PRIORITY INDICATORS

IA2030 includes indicators associated with strategic priorities. These are summarized in Annex 2. The overview below is based on the latest available data, usually from 2021; no preliminary 2022 data are available for these indicators.

SP1.2 Workforce: Human resource shortages have declined slightly but remain acute, particularly in the African and Eastern Mediterranean Regions.

The most recent data (for 2020) from the National Health Workforce Accounts indicate that health worker numbers increased by 14 million to 65 million between 2013 and 2020.

The global shortfall dropped from 18 million to 15 million; although it is projected to drop further by 2030, the estimated shortfall will still be 10 million.

Significant regional disparities still exist, with the African and Eastern Mediterranean Regions accounting for 53% of the global shortage in 2020; these two regions are projected to account for 72% of the global shortage by 2030.

SP1.6 Safety reporting: Major efforts are needed to help countries transition to case-based data sharing.

In December 2020, the Global Advisory Committee on Vaccine Safety (GACVS) recommended adopting case-based reporting rather than reporting of aggregate information, to provide sufficient information to support effective investigation and global data sharing. At the end of 2021, only 51 countries achieved the case-based reporting indicator.

SP2.1 Commitment: Only half of countries have passed legislation supportive of immunization as a public good, highlighting the need to promote further strengthening of political commitment to immunization.

99 out of 194 (51%) of countries reported having legislation in place that is supportive of immunization as a public good in 2021.

SP2.2 Demand: Opportunities exist to promote greater use of behavioural or social strategies by countries; efforts are also needed to assess the effectiveness of these strategies.

127 out of 194 (66%) of countries reported having implemented behavioural or social strategies to address under-vaccination.

Implementation was reported by 86% of low-income countries and 85% of lower-middle-income countries, but only 45% of high-income countries and 60% of upper-middle-income countries.

Countries with lower DTP3 coverage were more likely to have implemented behavioural or social strategies.

SP3.2 Equity: Limited if any progress has been made in closing equity gaps since 2019.

Averaged across all countries, the difference in coverage between the lowest-performing districts and national coverage was 18% in 2021 compared with 17% in 2019.

SP4.1 Breadth of coverage: Mean global coverage for a suite of key vaccines fell again in 2021.

Mean global coverage for 11 WHO-recommended vaccines fell to 68% in 2021 (2019 baseline: 70%).

Although the drops in 2020 and 2021 were relatively small, they follow many years of sharply rising coverage following the introduction of new vaccines since 2000; coverage of these vaccines has stagnated at relatively low levels or begun to decline.

SP5.1 Outbreak responses: While some global outbreak response systems appear to be functioning well, there is considerable scope to enhance the timeliness of responses to several diseases.

There were 29 outbreaks where outbreak response vaccination campaigns received support from international organizations in 2021.

The proportion of timely outbreak responses improved slightly over baseline, from 25% to 28%, but varied widely across outbreak types.

Criteria were met for 3/3 Ebola viral disease (EVD) responses, 3/6 yellow fever responses, 1/10 cholera responses, 0/3 measles responses, and 0/3 meningococcus responses.

SP6.1 Market health: Overall, the markets for the key vaccines used in low- and middle-income countries are trending towards greater diversity of suppliers and more stability.

Market health is a multi-faceted concept that considers the number of manufacturers, global reach and development pipelines for vaccines.

For 2021, markets were categorized as "healthy" for four vaccines, "concerning" for six vaccines and "unhealthy" for two (BCG and hexavalent vaccine), similar to the situation for 2020.

> Of the **79 lower middle-income and low-income** countries that provided information, **only nine (11.4%)** reported having a research agenda

SP6.3 Expenditure from domestic resources: Although some progress is apparent, further efforts are required to promote greater political commitment to immunization and adequate domestic financing.

Relatively few data are available on domestic expenditure on immunization; 37 low- and middle-income countries reported expenditure for all 4 years (2018–2021);

62% of these countries reported that the share of expenditure on vaccines paid by government increased or remained stable between 2020 and 2021.

WHO, UNICEF and other partners are working with countries to improve the response rate and quality of data reporting, including greater use of national health accounts.

SP7.1 Research agenda: Relatively few countries have a national agenda for research on immunization

23 out of 179 (12.8%) countries reported having a national agenda for research on immunization; 14 of these 23 countries (60.9%) were either upper middle-income or high-income countries.

Of the 79 lower middle-income and low-income countries that provided information, only nine (11.4%) reported having a research agenda.

It may be more appropriate for immunization research priorities to be integrated into broader health systems research strategies.

SECTION 4

COVID-19

In January 2022, WHO, UNICEF and Gavi established the COVID-19 Vaccine Delivery Partnership (CoVDP) to intensify support for COVID-19 vaccine delivery. Working with governments and partners, CoVDP provided urgent operational support to the 34 countries that were at or below 10% full COVID-19 vaccination coverage in January 2022. Goals included increasing full vaccination and booster coverage in both general and high-priority populations – older adults, healthcare workers, and people with co-morbidities.

As of early 2023:

13.2 billion doses have been administered globally, of which **4.9 billion doses** were administered in the **92** countries eligible for the Advance Market Commitment (AMC) scheme.

1.9 billion doses have been shipped through COVAX to 146 participants, including more than **280 million doses** for low-income countries (72% of their total vaccine supply).

Globally, primary series vaccination coverage has increased from **47% in January 2022 to 65% in January 2023**; coverage among the AMC92 has nearly doubled from 28% to 53%.

Meanwhile, in the **34 countries** that were at or below **10% coverage in January 2022**, coverage increased from 3% in January 2022 to 25% a year later.

Tangible results have been observed in several countries facing humanitarian emergencies, including the **Central African Republic** (41% complete primary series), **Somalia** (41%), **Ethiopia** (32%), **Nigeria** (31%) and **Afghanistan** (28%).

Inequalities in global coverage persist: **only 23%** of the population of **low-income countries** have completed their primary series **against 76% in upper-middle-income** countries and 75% in high-income countries.

There are **significant equity gaps, with booster dose** coverage as low as **2% in low-income countries versus 48% in high-income countries.**

CoVDP is now winding up and transitioning some of its core functions back to partner agencies and enhanced partner platforms. Information-sharing events (on data systems strengthening and the country stock-take) will provide valuable opportunities to showcase lessons learnt that will inform the future shape of pandemic preparedness and response.

CoVDP has published a guidance document, **Considerations for integrating COVID-19 vaccination into immunization programmes and primary health care for 2022 and beyond**, which lays out key programmatic considerations essential for moving from mass COVID-19 campaigns to integrated COVID-19 vaccination within immunization programmes, primary healthcare and other relevant health services. The document does not outline a prescriptive approach but presents considerations and options for countries to consider and apply based on their needs and local context.

It is likely that SARS-CoV-2 will **continue to evolve,** leading to periodic spikes in transmission and disease. This may require periodic boosting for high-risk populations, such as older people, people with co-morbidities, the immunocompromized, pregnant women and health workers. Since most high-risk groups are adults, this further emphasizes the need to strengthen or establish delivery strategies and platform beyond childhood vaccination programmes.

SECTION 5

NEW VACCINE LANDSCAPE

Much progress continues to be made on vaccine development against additional pathogens, and in preparation for the licensing of new vaccines.

Malaria:

Since 2019, more than 1.2 million children in Ghana, Kenya and Malawi have received at least one dose of **RTS,S/AS01** through the Malaria Vaccine Implementation Programme (MVIP). Data at 24 months have raised no safety or feasibility concerns. Hospitalization due to severe malaria and deaths were significantly lower in children who received the vaccine.

RTS,S/AS01 remains in short supply. More than 25 countries have expressed an interest in introducing RTS,S/AS01 and a framework for allocation of vaccines has been developed through a consultative process, with children at highest risk of severe disease being prioritized. Various actions are being taken to address supply constraints, with manufacturing being transferred from GSK to Bharat Biotech in India and GSK committing to provide 30 million doses of AS01 adjuvant.

Preparations are also being made for the potential approval of a second malaria vaccine, **R21/Matrix-M**, which completed a phase III trial in late 2022[1] and could become available for use in early 2024.

Polio:

Novel oral poliovirus vaccine type 2 (nOPV2), made available under WHO Emergency Use Listing (EUL), has moved from initial to wider use and a dossier has been submitted for WHO prequalification. To date, the vaccine has proven to be as safe and effective as mOPV2 but more genetically stable. nOPV2 has been verified for use in 42 countries at risk for cVDPV2, with a further 20 countries at different stages of verification. nOPV2 has been used in 28 countries since March 2021, with almost 400 million children vaccinated in 2022 alone.

TB:

In 2021, an estimated 10 million people developed TB disease and 1.6 million died of TB. Proof-of-concept data on **M72/AS01$_E$** raised hopes that the first new TB vaccine for more than a century could soon be available. New economic modelling suggests that, over 25 years, a vaccine with 50% efficacy at preventing TB disease among adolescents and adults could avert up to 76 million new cases and 8.5 million deaths[2]. It would be cost-effective in all high-burden settings, and deliver a return of US$7 for each US$1 invested through health costs averted and increased productivity.

[1] Datoo MS, Natama HM, Somé A et al. Efficacy and immunogenicity of R21/Matrix-M vaccine against clinical malaria after 2 years' follow-up in children in Burkina Faso: a phase 1/2b randomised controlled trial. Lancet Infect Dis. 2022;22(12):1728-1736.

[2] WHO. An investment case for new tuberculosis vaccines. 2022. Geneva: WHO. Available at https://www.who.int/publications/i/item/9789240064690.

WHO is developing new guidance, **Evidence Considerations for Vaccine Policymaking**, that summarizes the likely data and evidence needs of global and national policymakers, to expedite the introduction of a new vaccine following licensing[3]. The guidance provides a framework for vaccine development stakeholders to align activities to close key evidence gaps and ensure rapid implementation.

WHO has also announced plans for a **TB Vaccine Accelerator Council** to promote alignment across funders, global agencies, governments and end users to identify and overcome barriers to new TB vaccine development.

Respiratory syncytial virus (RSV):

RSV is the most common form of acute respiratory infection in young children, accounting for one in 50 deaths in children under 5 years of age and for one in every 28 deaths in children under 6 months of age. Most children affected live in low- and middle-income countries.

The most advanced vaccine candidate, pre-fusion protein F vaccine **(RSVpreF)**, given to women during pregnancy, has demonstrated high efficacy against severe RSV disease from birth[4]. A licensing application was submitted to the US Food and Drug Administration (FDA) in late 2022. A lyophilized single-dose vial and multi-dose vial are being developed to facilitate implementation in low- and middle-income countries.

In October 2022, SAGE recognized the need for speed and equity in implementation of RSV vaccination, and suggested that RSV vaccination had the potential to achieve major impact in low- and middle-income countries. However, full data may not be available to support individual country decision-making, leading SAGE to recommend that an additional study be carried out to assess full public health benefits. Country engagement activities are also planned to raise awareness of the likely availability of an RSV vaccine in the near future and to promote preparedness.

Dengue:

Recent years have seen a dramatic increase in cases of dengue, a viral infection transmitted by mosquitoes. Dengue is now endemic in at least 100 countries, with up to 400 million cases globally each year. While most infections are mild, dengue virus can cause severe and potentially lethal disease. In October 2022, the European Medicines Agency (EMA) adopted a positive opinion for a tetravalent vaccine **(TAK-003/Qdenga)** covering all four dengue serotypes and authorized its use in the EU in December 2022. Indonesia approved use of Qdenga in August 2022. Other vaccines are in development, including **TV-003/005**, a tetravalent vaccine undergoing a phase III trial.

[3] WHO. Evidence considerations for vaccine policy. 2022. Geneva: WHO. Available at https://www.who.int/publications/m/item/who-evidence-considerations-for-vaccine-policy-development-(ecvp)

[4] 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.

Group B streptococci (GBS):

In pregnant women, colonization with GBS can lead to invasive GBS disease, including sepsis and meningitis, in babies after birth. An estimated 400,000 neonatal cases occur each year, with up to 92,000 deaths, while survivors are at risk of long-term neurodevelopmental conditions. GBS can also lead to stillbirths and pre-term birth.

Two types of vaccine are in the pipeline – **polysaccharide conjugate vaccines and protein-based candidates**. Vaccines in both categories were designated FDA Breakthrough and/or EMA PRIME Therapy status in 2022. Because of the low incidence of GBS disease, phase III efficacy trials would be challenging to conduct, requiring very large sample sizes. It may be possible to secure initial licensing based on immunogenicity data, if immunological correlates of protection can be validated. Engagement with national regulators and policymakers will be required to assess the appetite for licensing and implementation based on immunogenicity rather than efficacy data.

Cholera:

A resurgence in cholera outbreaks, linked to factors such as mass population displacement due to drought and flooding and COVID-19-related weakening of health systems, has coincided with a global shortage of **oral cholera vaccine (OCV)**. At least 30 countries reported cholera cases in 2022, compared with fewer than 20 on average in the preceding 5 years. In response, the International Coordinating Group (ICG), the body that manages emergency supplies of vaccines, has shifted from a two-dose to a one-dose vaccination strategy, to increase the number of people protected. A single dose is known to be protective, although protection is likely to be less long-lasting than after two doses.

Over the longer term, OCV production capacity will be increased following a licensing and technology transfer agreement signed between the International Vaccine Institute (IVI) in the Republic of Korea and Biovac, a biopharmaceutical company based in South Africa. With initial funding from the Bill and Melinda Gates Foundation (BMGF) and Wellcome, the agreement will see Biovac supported to undertake all stages of OCV manufacture. Although Biovac-manufactured OCV is unlikely to be widely available before 2026, this will ultimately increase OCV availability and represents a major step forward for vaccine manufacturing in the region.

Gavi vaccine investment strategy:

Gavi has begun development of its new vaccine investment strategy (VIS) for 2024. Updated every five years, the VIS informs decision-making on inclusion of vaccines in the Gavi portfolio, based on the likelihood that new vaccines will be available within the next Gavi funding cycle. VIS development is based on a landscape analysis of both existing and developmental vaccines, and application of an evaluation framework to generate a shortlist for which investment cases are developed. Final decisions will be made by the Gavi Board in mid-2024 for inclusion in the Gavi 6.0 portfolio (2026–2030), subject to funding replenishment.

Diversifying manufacturing capacity

mRNA vaccine manufacturing hub:

mRNA-based COVID-19 vaccines have proven highly effective. In addition, mRNA vaccine technology is adaptable, potentially providing a platform for development of other new vaccines. To establish more widely distributed vaccine-manufacturing capacity, a global network of mRNA vaccine manufacturing sites is being developed.

This network has established a central R&D and pilot manufacturing site in South Africa, which is building the capacity of 15 partner programmes in Africa and other regions. The initial focus is on COVID-19 vaccine manufacturing but production of other mRNA vaccines is also planned.

Beyond mRNA vaccine platforms, other initiatives have been announced to further diversify manufacturing capacity. CEPI, for example, has entered into a 10-year partnership of up to US$50m with the Institut Pasteur Dakar, Senegal, to enhance its capacity to produce affordable vaccines for use in the global South. In addition, CEPI and BMGF are providing US$30m to Aspen Pharmacare Holdings Ltd of South Africa, to support vaccine manufacturing technology transfer from the Serum Institute of India. Through the partnership, Aspen will make pneumococcal, rotavirus, polyvalent meningococcal and hexavalent vaccines for use in Africa. The funding will also sustain regional vaccine manufacturing capacity to support outbreak responses, ensuring early access to vaccines in Africa during a public health emergency.

In 2021, the African Union Commission and the Africa Centres for Disease Control and Prevention (Africa CDC) launched a drive to ensure that Africa would be able to manufacture 60% of its vaccine needs by 2040, up from less than 1% at present. In 2022, the Partnerships for African Vaccine Manufacturing (PAVM), on behalf of Africa CDC, launched a Framework for Action with eight programmes to achieve this strategic objective.

Epidemic and pandemic preparedness and response

Ebola:

The Ebola outbreak in Uganda in 2022 led to more than 160 cases and 77 deaths. As the outbreak was of Sudan Ebolavirus, existing Ebola vaccines could not be deployed. Rapid preparations were made to evaluate Sudan Ebolavirus vaccines in early clinical development. Within 79 days of the declaration of the outbreak, a clinical trial protocol was developed and approved, a trial team was ready to start, and vaccines were packaged for use.

Before the trial could begin, Ugandan-led efforts to control the infection by public health measures were successful. Nevertheless, this was the fastest that an emergency vaccine trial has ever been conceived and approved. In addition, these efforts highlighted several ways in which preparations could be shortened still further in the future.

Mpox:

In July 2022, WHO declared an mpox outbreak a Public Health Emergency of International Concern (PHEIC). More than 100 countries have reported cases, with global case numbers peaking in August 2022. As smallpox vaccines provide protection against other orthomyxoviruses, they have been used to control the spread of mpox in high-risk groups.

Preparedness

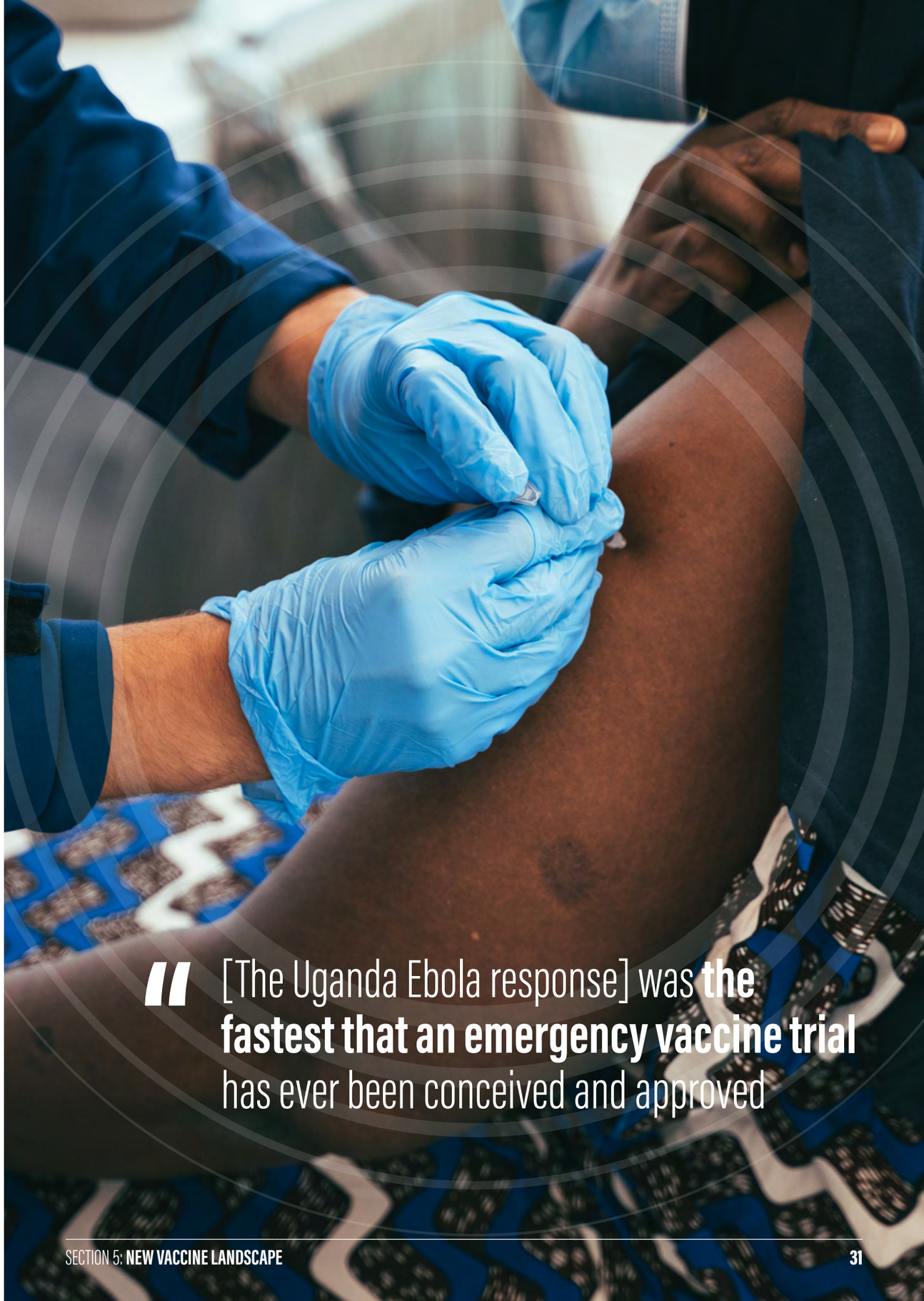
In November 2022, the **WHO R&D Blueprint team** launched a global consultative process to update the list of priority pathogens of outbreak/epidemic potential, which provides a key global point of focus for R&D. A complementary exercise is being undertaken by the IA2030 Working Group for SP7, to develop a list of priority pathogens for vaccine development where no vaccine currently exists and pathogens are not currently considered of epidemic potential (see page 38). For priority pathogens, research roadmaps and target product profiles are developed, and efforts are made to map and facilitate clinical trials and to strengthen regulatory and ethical processes to ensure rapid but rigorous assessment of new products such as vaccines.

CEPI released a document in 2022 outlining how its "100 days" mission – having a vaccine available within 100 days of the identification of a new pandemic threat – can be achieved[5]. This CEPI initiative sits within the G7 countries' wider 100 days mission for pandemic preparedness, which covers diagnostics and therapeutics as well as vaccines. The equivalent figure for COVID-19 vaccines was 326 days – itself a remarkable achievement.

The **Pandemic Fund**, a World Bank fund promoting pandemic preparedness and response (PPR), was launched at a G20 event in November 2022. The fund will provide a dedicated stream of additional, long-term financing to strengthen PPR capabilities in low- and middle-income countries and address critical gaps through investment and technical support at national, regional and global levels. The World Bank hosts the Pandemic Fund Secretariat, while a Technical Advisory Panel is chaired by WHO. More than US$1.6bn in financial commitments have already been announced towards the goal of US$10.5bn. A first round of funding was launched in January 2023, focused on disease surveillance, national laboratory systems and human resources.

In 2021, the African Union Commission and the Africa CDC launched a drive to ensure that Africa would be able to manufacture 60% of its vaccine needs by 2040, up from less than 1% at present. In 2022, the Partnerships for African Vaccine Manufacturing (PAVM), on behalf of Africa CDC, launched a Framework for Action with eight programmes to achieve this strategic objective.

[5] CEPI. Delivering pandemic vaccines in 100 days: What will it take? 2022. CEPI. Available at https://cepi.net/wp-content/uploads/2022/11/CEPI-100-Days-Report-Digital-Version_29-11-22.pdf?swcfpc=1



SECTION 6

RISING TO THE CHALLENGE

A major focus of activities at national, regional and global levels has been catch up of those missed in previous years and regaining the ground lost due to COVID-19-related disruption, in order to get back on track towards IA2030 goals. A key aim has been to combine catch up with strengthening of immunization systems to provide a stronger base for maintaining and increasing coverage levels.

National Immunization Strategies

Development of new **National Immunization Strategies**, successors to comprehensive multi-year plans organized around the IA2030 framework, has continued apace. Development is supported by a joint WHO–UNICEF process that facilitates country-led strategy development, with emphasis on integration within wide primary healthcare systems and integration of National Immunization Strategies within wider national health strategies.

By the end of 2022, 15 countries had introduced new National Immunization Strategies, with updating going on in multiple additional countries; an anticipated 44 countries will have completed the National Immunization Strategy development process by the end of 2023.

Two workshops were held in the African Region during 2022 to support anglophone and francophone countries undertaking the National Immunization Strategy development process. A further workshop in this region for remaining countries is planned for 2023. A workshop may also be organized in the Western Pacific Region, the Eastern Mediterranean Region is looking to develop regional capacity to support development of National Immunization Strategies, and the South-East Asian Region is attempting to integration new national strategy development into its ongoing processes.

Regional IA2030 implementation

Development of **regional IA2030 strategic frameworks** continued in the Eastern Mediterranean Region and the Region of the Americas. Prioritization activities in the Eastern Mediterranean Region have taken into account the significant diversity of countries in the region, with priorities varying markedly between high-income, middle-income countries, and those affected by instability and conflict. In the Region of the Americas, strategic planning has focused on specification of a regional M&E indicator framework to drive forward action.

Making up lost ground – a springboard for future progress

The 2022 Technical Progress Report included an "action agenda" of 12 high-level recommendations in response to 2021 immunization data. Several of these recommendations are being taken forward through the **"Big Catch Up"** response, a coordinated response from global partners to support post-COVID recovery. This initiative has the key aims to:

- **Catch up:** Reach children who missed vaccination in recent years and establish processes for catch up in future years.
- **Restore:** Return vaccination coverage levels in 2023 to those seen pre-COVID.
- **Strengthen:** Strengthen immunization systems within primary healthcare to re-establish the trajectory towards 2030 targets.

A particular focus will be the **20 countries with the largest number of zero-dose children**, which collectively account for almost 80% of zero-dose children. Some of these countries have already begun catch-up activities and restored coverage to pre-COVID levels but still have under-immunized populations yet to be reached effectively.

The approach being taken is based on the following guiding principles:

- Action plans for catch up activities are country-owned, with integrated partner support following the "one plan, one team, one budget" model.
- Technical assistance is tailored to country context.
- Technical assistance is complemented by intensified political advocacy and resource mobilization.
- A strong M&E framework monitors progress in every country.

Zero-dose children are likely to be from communities that are disadvantaged and underserved. Catch-up activities have the potential to establish new ways of ensuring future cohorts are not missed, and to ensure that such communities can also gain access to additional primary health services alongside immunization in the future. This will require a whole-system approach shaped by specific local contextual challenges and with an eye on future delivery as well as immediate catch up.

Key challenges are likely to include the need to vaccinate children outside the usual age range, limited experience of monitoring vaccination in non-standard age groups, potential vaccine supply issues if demand is not accurately predicted, and resourcing, although there are opportunities to use existing resources more flexibly.

The Big Catch Up initiative includes a strong emphasis on political commitment. **A joint letter from the heads of WHO, UNICEF and Gavi is being sent to the heads of state** in the 20 focus countries, outlining the goals for the year and offering collective organizational support. Gavi is also sending **letters to each minister of health** regarding the Gavi resources available and how they can be used.

To address the growing risk of outbreaks, countries are being advised to prioritize strategies to quickly reach children with measles/measles–rubella vaccine, polio (OPV/IPV) and pentavalent vaccine, and yellow fever and MenA vaccine where appropriate, taking into account recent SAGE recommendations.

For human papillomavirus (HPV) vaccination, there is a separate ambitious agenda of revitalization of vaccination efforts for countries with suboptimal coverage, including those where backsliding occurred during the pandemic years, as well as promotion of vaccine introduction in countries that have yet to do so. Introduction of a one-dose schedule could also encourage additional new introductions. Gavi is sending letters to ministers of health regarding support for HPV revitalization.

Several possible sources of funds could support Big Catch Up activities, including repurposing of COVID-19-related funding. Gavi-eligible countries have access to a range of grants (e.g. Health Systems Strengthening (HSS), Equity Accelerator Fund (EAF), Cold Chain Equipment Optimization Platform (CCEOP), COVID-19 Delivery Support (CDS), and targeted country assistance (TCA)) that can be reprogrammed to support catch up and strengthening. Gavi has also recently simplified the process of reallocating existing HSS, EAF and CDS funding, which in most cases can now be rapidly approved by country-level staff.

Countries could also explore underutilized funding sources such as the Global Fund to fight AIDS, Tuberculosis and Malaria, bilateral support and regional development bank funding opportunities. Recovery is also a strong focus of the SDG3 Global Action Plan, which includes all UN agencies and donors such as the World Bank and Global Fund.

IA2030 Working Groups

The incorporation of the **Measles and Rubella Partnership** into the IA2030 architecture emphasized the importance of considering measles and rubella control within the wider immunization programme context. The IA2030 Coordination Group and other IA2030 structures, including Working Groups, will have a critical role to play in ensuring that the goals of the Measles and Rubella Strategic Framework are achieved, while also ensuring that activities also deliver wider immunization benefits and stronger national immunization systems.

Among Working Group outputs during the year was **guidance on integration of immunization and other primary healthcare services**, developed by **SP1 Working Group**. Following extensive global consultation, facilitated by The Geneva Learning Foundation, an Immunization for Primary Healthcare Framework for Action was developed, plus examples of good practice and suggestions for practical actions that immunization programme managers and other national stakeholders can take to promote service integration.

SP2 Working Group activities are integrated with those related to the Demand Hub, a global repository of resources related to demand. Activities included comprehensive training on vaccine demand for more than 500 participants in June–July 2023 and coordination of technical assistance to regions and countries for uptake of COVID-19 vaccines.

The SP4 Working Group on life course and integration supported the development of guidance on **integration of COVID-19 vaccination** into existing immunization programmes and campaign integration. A year-long webinar series on life course and integration was also launched.

The SP5 Working Group finalized its theory of change on reducing the numbers of zero-dose children in conflict settings. It also organized a webinar on immunization resiliency in conflict settings, including presentations on Iraq, South Sudan and USAID's MOMENTUM Integrated Health Resilience (MIHR) approach. The Working Group is also discussing how to map implementing partners and humanitarian agencies in conflict setting to facilitate engagement.

> "The **IA2030** Coordination Group and other IA2030 structures, including **Working Groups**, will have a **critical role to play** in ensuring that the goals of the **Measles and Rubella Strategic Framework** are achieved

SP6 Working Group activities on sustainable financing included promoting the findings of the World Bank analysis "From Double Shock to Double Recovery: Implications and Options for Health Financing in the time of COVID-19" and its implications for primary healthcare and immunization financing to the broader immunization community. As this work continues to be updated, the Working Group will continue to amplify its findings on which countries are likely to have the greatest stresses on their health systems, given their macroeconomic outlook and progress in recovery from the COVID-19 pandemic.

In addition, consultative engagement was undertaken on "Hot topics in financing for immunization" at the Sixth Annual Health Financing Forum, which focused on approaches to mobilizing and pooling funds to pay for primary health care, with presentations from the governments of Bangladesh and Nigeria as well as partners (Gavi, UNICEF, World Bank).

SP6 activities on improving access to vaccine markets engage demand and supply levers to alleviate access challenges. These include partners working together to estimate programmatic needs for regions and countries under different scenarios. In parallel, partners work closely with manufacturers' organizations to gain better understanding of their supply plans and proactively address potential access, shortage and affordability issues.

The SP7 Working Group has been working in partnership with the WHO Vaccine Product and Delivery Research Unit on a **pathogen prioritization exercise** for new vaccine development (for pathogens for which no vaccine currently exists and that have not been considered as part of pandemic preparedness; see page 30).

An extensive consultation with regional stakeholders has been undertaken, based on an online survey that uses a multi-criteria decision analysis (MCDA) methodology to compare pathogens across a range of criteria and to weight the importance of these criteria. Engagement with Regional Immunization Technical Advisory Groups (RITAGs) and other regional stakeholders is being used to generate region-specific pathogen rankings.

Preliminary analyses suggest that HIV, malaria and TB are considered high priorities across all regions but there is considerable variation in prioritization of other pathogens. The final list will support alignment of support for R&D on priority pathogens, potentially at a regional level.

A vaccination coverage estimation technical workgroup was established under the umbrella of the **Data Strengthening and Use Working Group**. Its key role is to develop technical guidance on vaccination coverage measurements and estimation methodologies, and to support countries in use of estimation to inform decision-making at different levels. This Working Group has also been collaborating with the IA2030 M&E Working Group on a project to explore the feasibility of more timely reporting of IA2030 or related indicators.

CONSULTATIVE ENGAGEMENT AND THE GENEVA LEARNING FOUNDATION

The IA2030 Framework for Action includes a commitment to consultative engagement, with global stakeholders seeking to gain input from countries and those working within national immunization programmes, who are most familiar with challenges on the ground and are creatively trying to address them in their everyday work.

The Geneva Learning Foundation (TGLF) organizes peer learning programmes, whereby health professionals from low- and middle-income countries share experience and advice in response to the challenges identified by their peers, with international experts on hand to provide further guidance. In 2022, through a Wellcome-funded project, TGLF invited immunization professionals to join a "Movement for IA2030", through which they commit to making efforts to achieve IA2030 goals and targets through their own local action. By the end of 2022, more than 10,000 immunization professionals from 99 countries had made this commitment.

During 2022, TGLF also worked with a range of global partners and IA2030 Working Groups on specific topics related to IA2030. This included online experience sharing sessions on interpersonal communication, organized in partnership with UNICEF, and hosting of the launch of new guidance on integration of immunization and other primary healthcare services, developed by the IA2030 Working Group for SP1, immune programmes for primary healthcare and universal health coverage. Follow up activities will be undertaken to assess how frontline staff are using this guidance.

Monitoring and evaluation

The Monitoring and Evaluation (M&E) Working Group has responsibility for designing and implementing global monitoring, evaluation and action (ME&A) cycles, with key reporting outputs from the 2022 cycle including the Technical Progress Report, online IA2030 Scorecard and this Partner Progress Report.

For the Technical Progress Report, the M&E Working Group developed a process for technical IA2030 strategic priority Working Groups to report progress against global indicators and provide key insights from 2021 data and for additional input to be collated from regions.

From these analyses, 12 overarching recommendations emerged as a set of priorities for which global partners should support regions and countries to drive action. These recommendations were endorsed by SAGE in October 2022. Several of these recommendations were followed up through the Big Catch Up initiative, providing an illustration of a global ME&A cycle.

The IA2030 Scorecard was released on the IA2030 website in September 2022 and shows progress against the seven IA2030 Impact Goals and 11 strategic priority indicators at the global, regional and country levels. The Scorecard is intended to be used by global partners, regional bodies, and country governments as a tool for advocacy, accountability and decision-making. Further Scorecard refinements are proposed for 2023.

In 2023, the global M&E team will work to strengthen linkages with regional and country M&E processes, including through supporting regions to develop regional IA2030 M&E frameworks. The goal of these activities is to strengthen the governance, processes and standards to support the collection and use of data to guide IA2030 decision-making at all levels.

The M&E Working Group will move toward closer integration with other IA2030 Working Groups, including considering merging with the Data Strengthening and Use (DSU) Working Group.

Based on insights from 2022, the M&E Working Group will be working to update the IA2030 Framework for Action, including revising global indicators and adding new indicators where needed (e.g. integration of COVID-19 indicators). In 2022, seven new indicators to measure progress against strategic priority objectives were piloted through the WHO/UNICEF electronic joint reporting form on immunization (eJRF). Based on lessons learned, several additional changes are proposed for data collection in 2023.

First IA2030 face-to-face meeting

In February 2023, an IA2030 in-person meeting, held in Geneva, provided the first opportunity for global partners, heads of Working Groups, regional representatives and other global and regional stakeholders to meet face to face since the launch of IA2030.

The aim of the meeting was to critically assess current partnership structures and activities, and to discuss potential ways in which global and regional partners could work together more effectively. Two days of intensive, open and productive dialogue among partners led to the identification of three priority areas for the next six months:

1. **Reorienting of the IA2030 operational model to ensure a greater focus on regions and countries**
    - Providing greater scope for regional structures and processes to identify country needs and deliver coordinated and tailored support as required. This will also require a reassessment of the role, focus and composition of Working Groups and the possibility of consolidation to address overlapping remits. The role and composition of the IA2030 Partnership Council also needs to be reviewed.

2. **Leveraging advocacy opportunities to build on World Health Assembly endorsement to maintain immunization on the political agenda**
    - The need for intensified communications and advocacy activities at global, regional and country levels was widely recognized.

3. **Building on the promising range of consultative engagement mechanisms to strengthen dialogue, especially at country level.**
    - Platforms such the Geneva Learning Foundation, TechNet-21 and the Demand Hub, and others, offer complementary opportunities to engage with country- and sub-country-level actors to inform regional- and global-level actions, facilitate dissemination and support ongoing dialogue.

In light of these conclusions, the IA2030 Coordination Group has begun a process to identify a revised operational model that places greater emphasis on regional coordination and country support according to identified need. This will include further consultation with Working Groups to discuss their role, potential for consolidation and position within a more regionally focused operational model.

SECTION 7

ANNEXES

Annex 1: Impact goal (IG) indicators and targets, baseline and 2021 data

IMPACT GOAL	INDICATOR	2030 TARGET	2021 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 by immunization in 2021-2030**†	2030 target 3.99 M **(5.6% lower than 2021 annual target of 4.23 M)** 50 M
	1.2 Number and percent of countries achieving endorsed regional or global vaccine-preventable disease (VPD) control, elimination, and eradication targets	**All countries achieve endorsed targets** **Eradication target endorsed for polio (WPV) and elimination targets for measles, rubella and maternal and neonatal tetanus (MNT). Additional VPD targets may be added in future years**‡	WPV 99% (192 OUT OF 192) MEASLES 54% (80 OUT OF 147) RUBELLA 71% (90 OUT OF 126) MNT 94% (182 OUT OF 194) **Baseline is 2021 (data shown here)**
	1.3 Number of large or disruptive VPD outbreaks	**Declining trend in the annual number of large or disruptive VPD outbreaks**	VPD / 2018-2020 annual avg. / 2021 / TREND CHOLERA 1 1 → EBOLA 1 0 ↓ MEASLES 51 22 ↓ MENINGOCOCCUS 2 2 → cVDPV 22 34 ↑ WPV 2 3 ↑ YELLOW FEVER 4 6 ↑
2 PROMOTE EQUITY	**2.1** Number of zero-dose children	**50% reduction in number of zero-dose children**	2019 (baseline) 13.3 M 2021 4.9M (37% increase) 18.2 M 6.2 M (2030 target)
	2.2 Introduction of new or underutilized vaccines in low- and middle-income countries	**500 vaccine introductions by decade's end**	40 127 167 500 33% of 2030 target 2030 target Routine COVID-19
3 BUILD STRONG IMMUNIZATION PROGRAMMES	**3.1** Vaccination coverage across the life-course	**90% coverage of full course for selected vaccines**	DTP3 86% 81%; MCV2 71% 71%; PCV3 50% 50%; HPVc 14% 12% 2019 2021 2019 2021 2019 2021 2019 2021 90% (2030 target)
	3.2 UHC Index of Service Coverage	**Universal Health Coverage increase in all countries, regions, and globally**	68 (2019) → Data not available this year

*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.

‡One region (47 countries) does not have a measles elimination target; two regions (68 countries) do not have a rubella elimination target.

Annex 2: Strategic Priority (SP) indicators and targets, baseline and 2021 data*

STRATEGIC PRIORITY	INDICATOR	2021 DATA Unless otherwise noted, 2019 is indicator baseline
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†	**No data available for 2021**
	1.2 Density of physicians, nurses and midwives per 10,000 population†	**55.9 health workers per 10,000 population‡ (physicians: 16.4, nurses/midwives: 39.5)** **2019 baseline: 56.4 (17.4 physicians and 39 nurses/midwives)**
	1.3 1.3 Proportion of countries with on-time reporting from 90% of districts for suspected cases of all priority VPDs included in nationwide surveillance†	**43% (20 out of 47 countries)**
	1.4 Proportion of time with full availability of DTP and MCV at service delivery level†	**31.5%** §
	1.6 Proportion of countries with at least one documented (with reporting form and/or linelisted) individual serious adverse event following immunization (AEFI) case safety report per million total population†	**26% (51 out of 194 countries)** ***2019 baseline: 28% (54 out of 194)***
2 COMMITMENT & DEMAND	**2.1** Proportion of countries with legislation in place that is supportive of immunization as a public good†	**51% (99 out of 194 countries)**
	2.2 Proportion of countries that have implemented behavioural or social strategies (i.e., demand generation strategies) to address undervaccination†	**66% (127 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)	**63% DTP3, 63% MCV1, 49% MCV2** ***2019 baseline: 67% DTP3, 66% MCV1, 53% MCV2***
4 LIFE COURSE & INTEGRATION	**4.1** Breadth of protection (mean coverage for all WHO-recommended vaccine antigens)	**68%** ***2019 baseline: 70%***
5 OUTBREAKS & EMERGENCIES	**5.1** Proportion of polio, measles, meningococcus, yellow fever, cholera, and Ebola outbreaks with timely detection and response	**28% (7 out of 25 outbreaks)** ***average 2018-2020 baseline: 25%***
6 SUPPLY & SUSTAINABILITY	**6.1** Health of vaccine markets, disaggregated by vaccine antigens and country typology	**Unhealthy:** BCG, hexavalent DTaP-IPV-Hib-Hep B (acellular pertussis-containing) **Concerning:** HPV, PCV, pneumococcal polysaccharide, measles, measles-rubella, MMR **Healthy:** Penta (whole-cell pertussis-containing), tetanus-diphtheria, IPV (stand-alone), rotavirus ***2019/2020 baseline: No changes except HPV moved from 'Unhealthy' to 'Concerning'***
	6.2 Proportion of countries whose domestic government and donor expenditure on primary health care increased or remained stable	**No data available for 2021**
	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¶	**62% (23 out of 37 countries, 2020 to 2021)** ***2018-2019 baseline: 59% (22 out of 37)***
7 RESEARCH & INNOVATION	**7.1** Proportion of countries with an immunization research agenda†	**12.8% (23 out of 179 countries)**
	7.2 Progress towards global research and development targets	**No data available for 2021**

* Table only includes SP objectives for which global indicators have been specified.
† Indicators based on new eJRF questions piloted in 2021. Questions will be revised in light of lessons learned during piloting.
‡ 2020 data used because 2021 data are not yet available.
§ Analysis of first-year eJRF responses raise doubts about the validity of data.
¶ Estimate excludes domestic expenditure on COVID-19 vaccination.

Annex 3: IA2030 Partnership Council, Coordination Group and Working Group Leads

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IMMUNIZATION AGENDA 2030