PERFORMANCE OF MIDDLE-INCOME COUNTRIES: IMPACT GOALS, BASELINE-2021 IMMUNIZATION AGENDA 2030

IA2030

DRAFT SUMMARY FOR COMMENT

KEY POINTS:

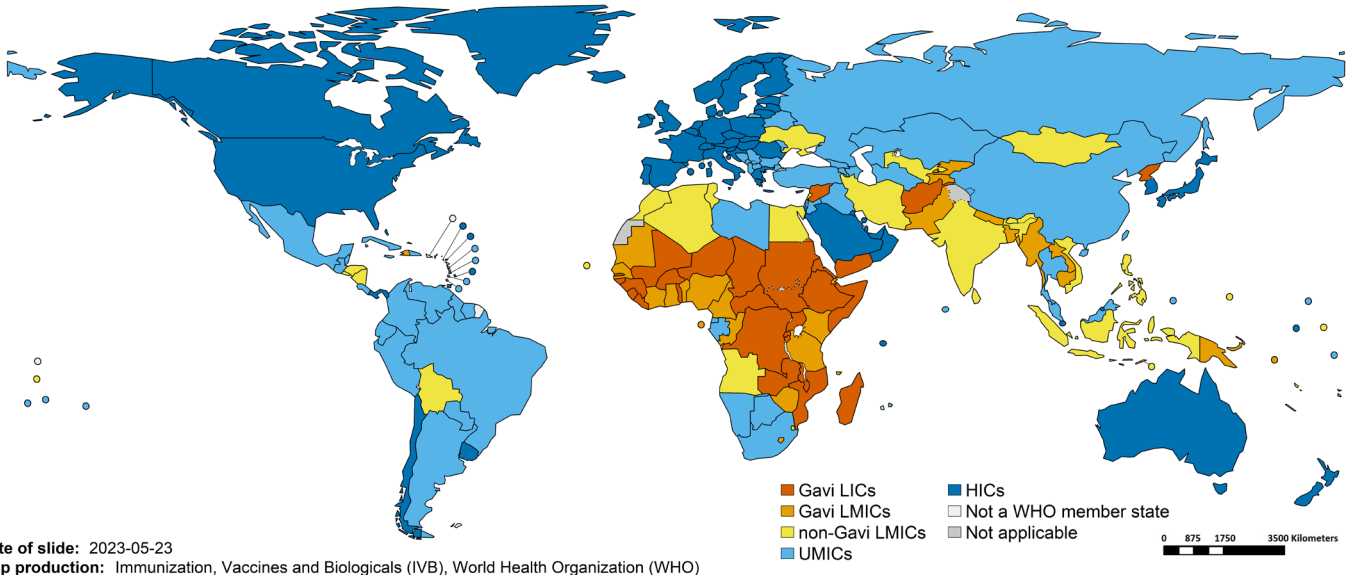
- Health agencies, political institutions, global and regional funders, and immunization partners have noted insufficient immunization system improvements among middle-income countries (MICs) ineligible for Gavi support.
- A large population of children reside in Gavi-unsupported MICs, where 68 million infants are born each year, making up 51% of the world's infants.[1]
- Vaccine coverage declined more in non-Gavi MICs than in other country groupings during the pandemic, with coverage for certain vaccines, like HPVc, dropping precipitously.
- Further, 8.2 million of the 18 million "zero dose" children who never received any vaccines in 2021 (45% of all zero-dose children) live in non-Gavi-MICs.
- This brief highlights data from a selection of the Immunization Agenda 2030 Impact Goals, adapted from the Immunization Agenda 2030 (IA2030) scorecard.
- As a follow up to two other formative MICs-related white papers from 2015 and 2020, this brief seeks to highlight global performance trends and the need for coordinated actions to improve vaccine access in MICs.

I. WHY FOCUS ON MIDDLE-INCOME COUNTRIES

Each year, one out of every two infants are born in a middle-income-country (MIC) that is ineligible for support from Gavi, the Vaccine Alliance (Gavi) (see Box 1 for income threshold) (World Bank, 2021).[1] Eighty-two countries[2] are currently non-Gavi-eligible MICs, with 55 upper-middle-income countries and 27 lower-middle income countries. Ten new countries will likely transition out of Gavi support by 2030 (Gavi, 2023). Nearly half of the world's zero-dose children, meaning children who have not received a first dose of a vaccine containing diphtheria-pertussis-tetanus (DTP), live in non-Gavi-eligible MICs.

As shown in charts below, the performance of MICs in 2021 differed across five of the seven IA2030 Impact Goals (IGs) by their eligibility for Gavi support. Without urgent action to extend targeted support for these countries, the 2030 global targets endorsed by WHO member states will not be met and tens of thousands of preventable deaths will occur. In particular, because of major declines in vaccine coverage during pandemic years and large infant cohorts residing in middle-income countries, it will be difficult to achieve the agenda's target of averting 50 million deaths from 2021-2030 without significant immunization catchup, recovery, and strengthening in the post-pandemic years (WHO, 2021).

Figure 1. Overview of countries by Gavi and income group



Date of slide: 2023-05-23
Map production: Immunization, Vaccines and Biologicals (IVB), World Health Organization (WHO)

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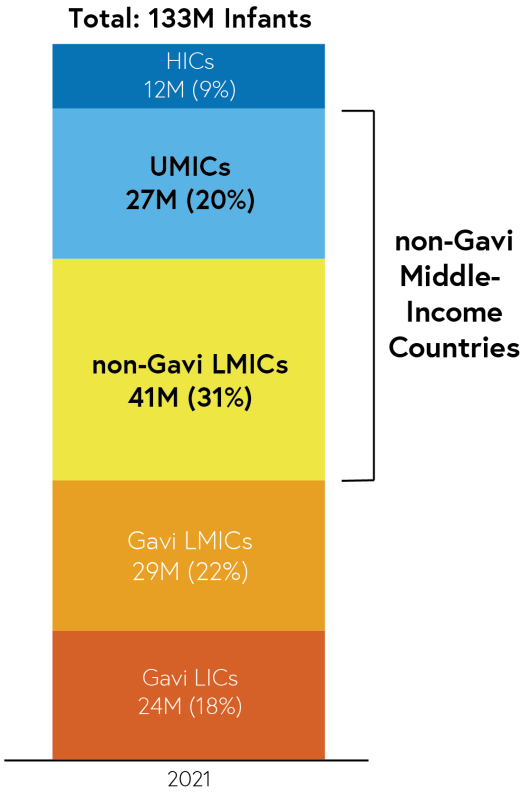
World Health Organization

[1] Data are as of 2021 if not otherwise indicated.
[2] WHO Member States are listed on this web page: https://www.who.int/countries
[3] Zero-dose children defined as number of surviving infants not receiving DTP1.

Middle-income countries (MICs) include both lower middle- and upper middle-income countries. For the 2023 fiscal year, the World Bank defines lower middle-income countries (LMICs) as economies with a gross national income (GNI) per capita, calculated using the World Bank Atlas method, of between US$1,086 and US$4,256 and upper middle-income countries (UMICs) as those with a GNI per capita of between US$4,256 and US$13,205 (World Bank, 2023). In 2023, countries were eligible for new vaccine introduction and health system and immunization strengthening support from Gavi, the Vaccine Alliance if their GNI per capita was below $1,730 (Gavi, 2023).[4]

MIC Strategy. To gain clarity on the nature of performance gaps in MICs, WHO convened a Middle-Income Country Task Force to develop a strategy and plan of action. The Task Force assessed immunization performance, concluding that non-Gavi-eligible MICs represent a large share of un- and under-protected children because such countries face challenges in 1) strong decision making, 2) financial sustainability, 3) adequate demand and supply of services, 4) affordable access to supply (MIC Task Force, 2015). A support group on MICs was established by the IA2030 Secretariat in 2020, producing an MIC Annex to the IA2030 Framework for Action that includes baseline estimates for MIC performance as well as modeling estimates of the number of additional lives saved with new vaccine introductions (Immunization Agenda 2030, 2020).

Figure 2. Proportion of the global surviving infant population represented in each Gavi and income group out of 133 million surviving children globally (countries represented) in 2021



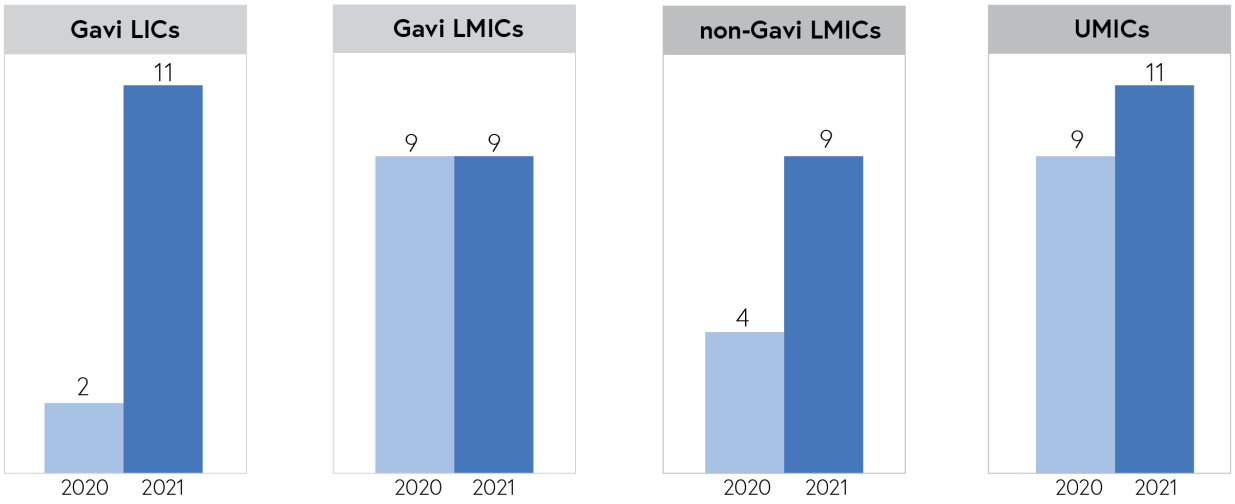
[4] Refers to traditional sources of support from Gavi, the Vaccine Alliance, excepting the Gavi MICs Approach.

II. VACCINE COVERAGE: STAGNATION, SETBACKS, AND INEQUITIES

Vaccine Introduction

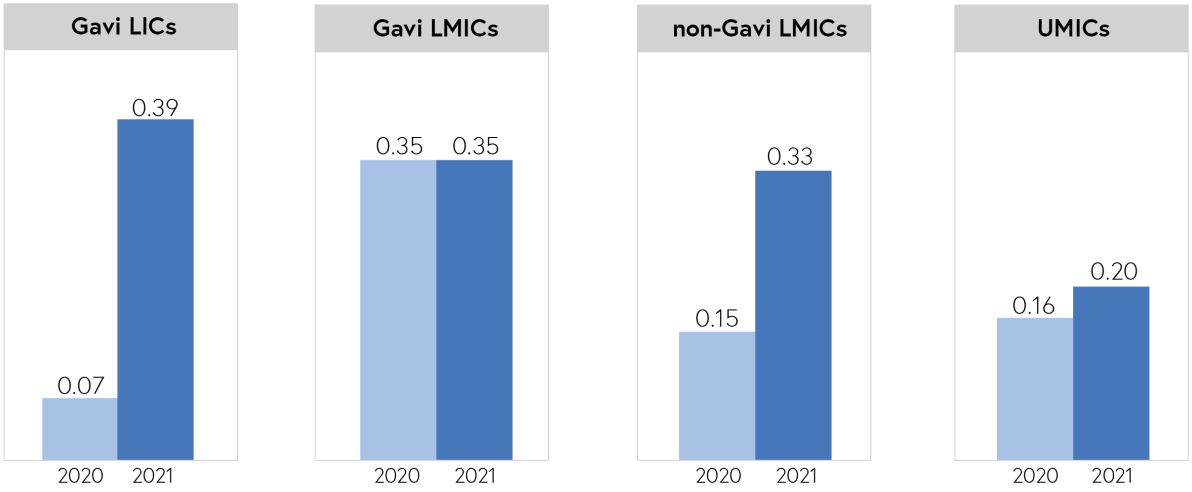
Aside from COVID-19 vaccines, there were proportionally fewer introductions of new and under-utilized vaccines[5] in non-Gavi MICs when compared to MICs with Gavi support. While the IA2030 scorecard website shows Impact Goal 2.2 as on-track globally—implying that vaccine introductions in LMICs are on pace to total 500 by 2030—this is a result of the extraordinary efforts to introduce COVID vaccines, which 127 low- and middle-income countries began using routinely in 2021. That year, the average number of other vaccines introduced in non-Gavi LMICs was 0.33, compared to 0.35 in Gavi-LMICs and 0.39 in Gavi-eligible LICs (Figure 4). Concurrantly, upper-middle-income countries (UMICs) had a much lower rate of new vaccine introduction, at 0.2 per country on average.

Figure 3. Number of new or underutilized vaccines, other than COVID-19, introduced to low- and middle-income countries



[5] Vaccines included in this indicator that are recommended by WHO for use in national immunization schedules in all countries: HepB birth dose, Hib, HPV, IPV2, MCV2, PCV, rotavirus, rubella, DTP booster (currently reporting the fourth dose at any age), and COVID-19 (interim recommendations).

Figure 4. Average number of new or underutilized vaccines divided by the number of countries in each income groupings, other than COVID-19, introduced to low- and middle-income countries



Coverage and Equity

Coverage of vaccines containing antigens for diphtheria-pertussis-tetanus (DTP3), measles (MCV2), pneumococcus (PCV3), and human papillomavirus (HPVc), four critical vaccines given during infancy, childhood, and adolescence, stagnated or dropped during pandemic years as seen in Figure 5. As such, the global target for Impact Goal 3.1 of 90% coverage by 2030 is off track for all four vaccines.

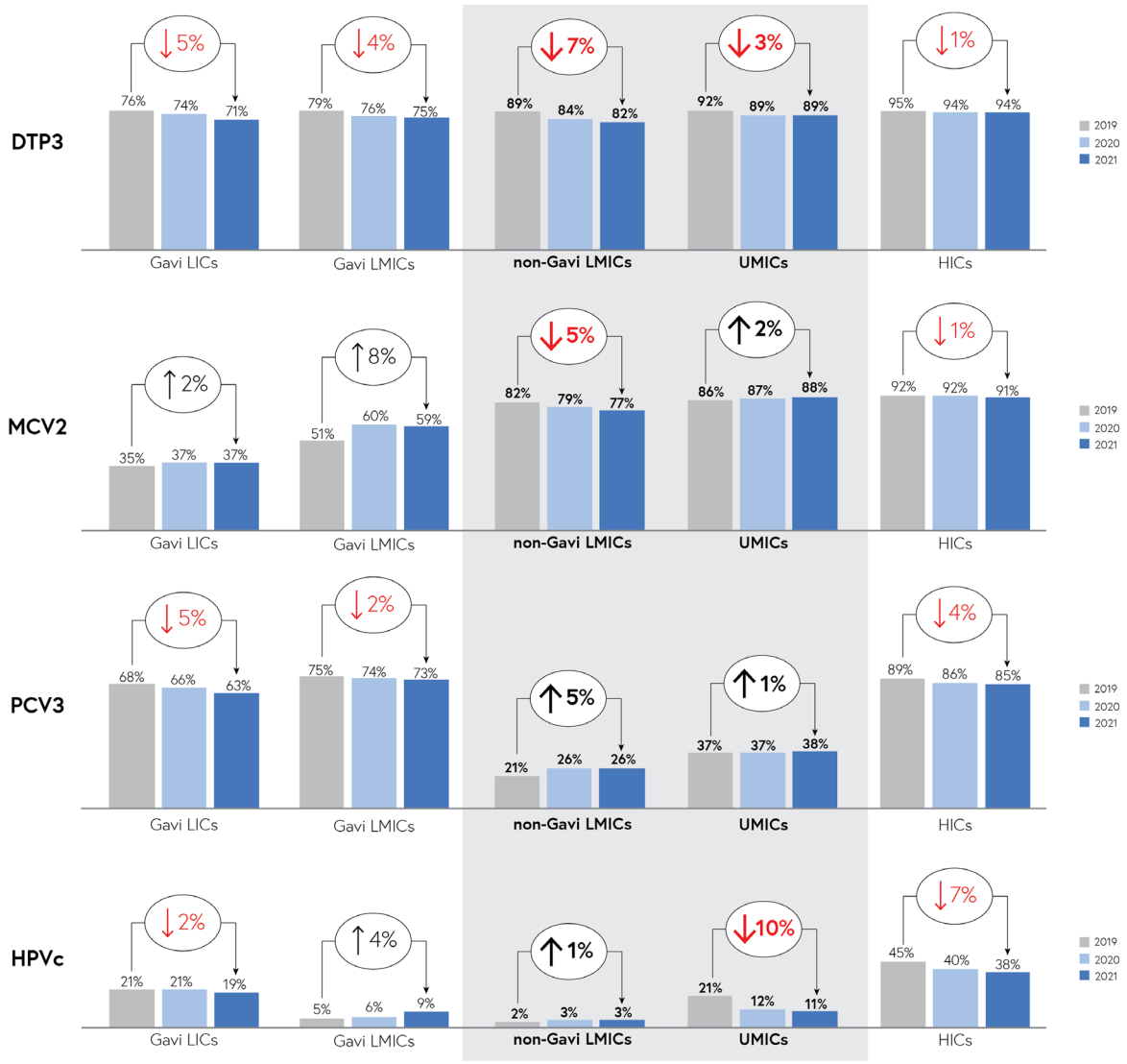
DTP3 coverage. Coverage of DPT3 dropped across all country groupings during the first two pandemic years, but the biggest decrease from 2019 to 2021, from 89 to 82%, was seen in non-Gavi LMICs.

Measles coverage. Global coverage of a second dose of a measles-containing vaccine was stagnant globally. In Gavi-LMICs, MCV2 coverage increased by 8%, whereas MCV2 coverage dropped in non-Gavi LMICs by 5%.

New vaccine coverage. Global coverage of newer vaccines, PCV3 and HPVc, has also been relatively static or decreased since 2019. Further, in 2021, MICs ineligible for Gavi support typically had PCV3 coverage that was less than half, on average, of coverage in Gavi-eligible-LMICs. Full coverage of PCV3 was 26% in non-Gavi LMICs in 2021 compared to 73% in Gavi-eligible LMICs. PCV3 coverage in UMICs was 38% in 2021. Non-Gavi LMICs saw PCV3 coverage increase from 2019 to 2021, presumably owing to new introductions, from 21 to 26%, while PCV3 coverage in UMICs was stagnant.

Meanwhile, HPVc vaccine coverage dropped globally between 2019-2021, remaining very low and off-track for meeting 2030 targets, with similar trends within each country groupings. However, Gavi-LMICs saw an HPVc coverage increase of 4% from 2019 to 2021, while just 2-3% of adolescents in non-Gavi-LMICs received all doses of HPV in 2019 and 2021. From 2019 to 2021, HPVc coverage in UMICs dropped from 21% to 11%.

Figure 5. Vaccination coverage across the life course – DTP3, MCV2, PCV3, and HPVc

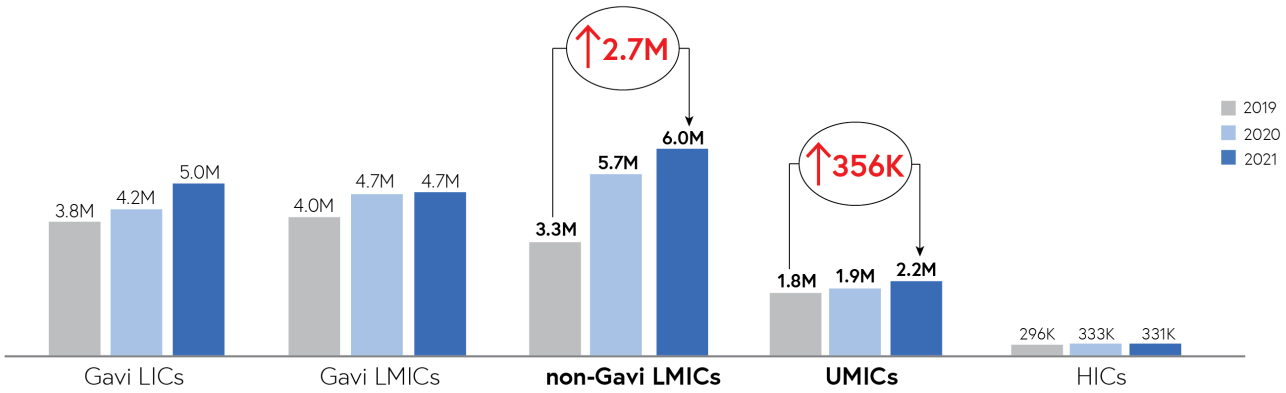


Equity and Zero Dose Status

Globally, the number of zero-dose children, or those not receiving DTP1, increased during pandemic years by 37%, from 13.3 to 18.2 million. As such, Impact Goal 2.1 is off-track toward the global target of decreasing the number of zero-dose children by 50% by 2030.

Within each country group, more children missed out on DTP1 in 2021 when compared to 2019, but their numbers increased significantly in MICs, as seen in Figure 6. The number of zero-dose children in non-Gavi MICs grew by 3.1 million, an increase of 61% in two years and representing 45% of all zero-dose children globally.

Figure 6. Number of zero-dose children



III. CONTROL OF VACCINE-PREVENTABLE DISEASE

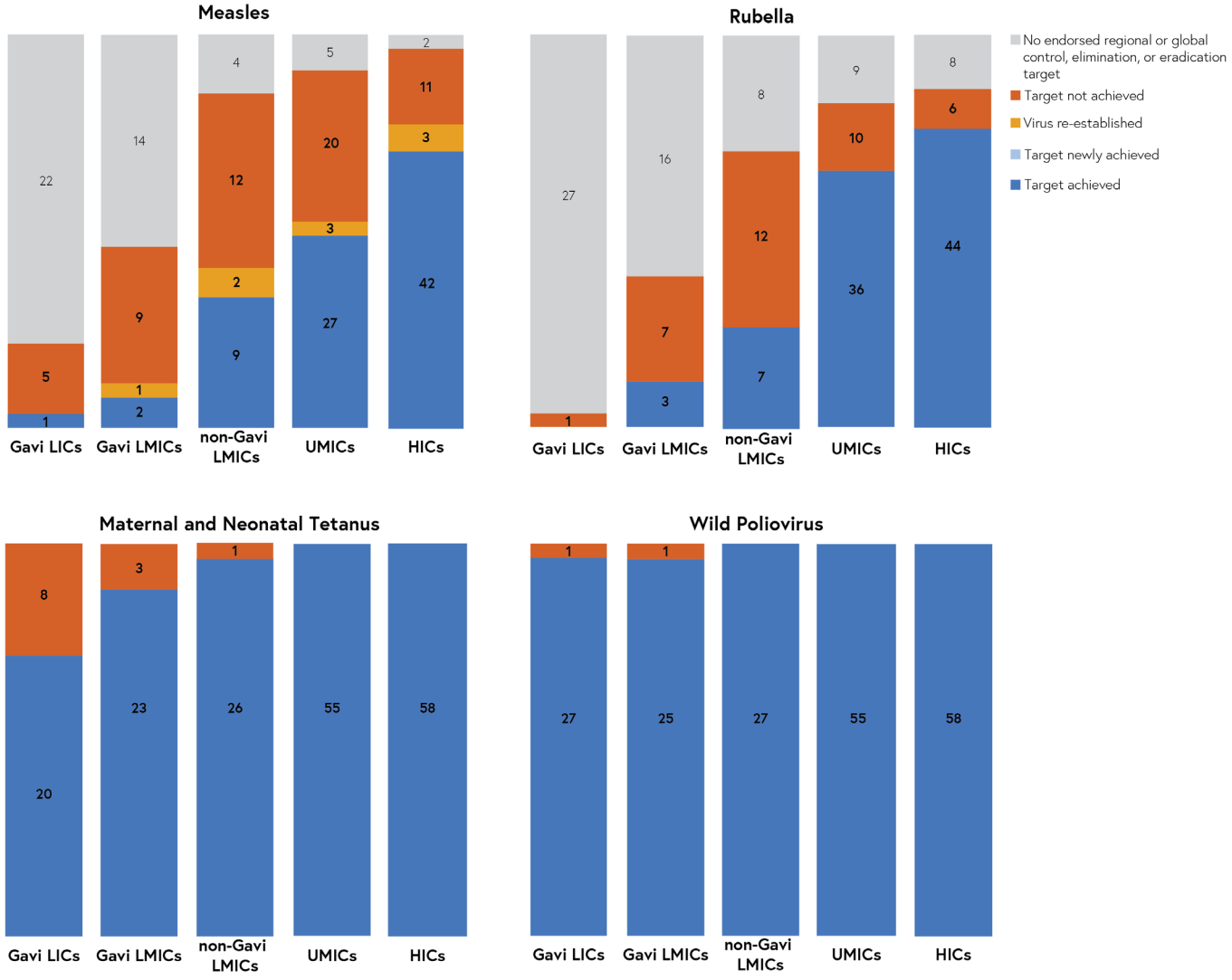
Disruptions in vaccine coverage described above will negatively affect disease control efforts and the number of lives that can be saved through immunization worldwide. Data from 2021 largely do not reflect such dynamics, but discrepancies in disease control efforts and lowered deaths averted are concerning. The pandemic may have a more severe impact on the burden of vaccine preventable disease and mortality across the life span in certain countries based on their income level and eligibility for donor support.

Outbreaks and Emergencies

Disease control, elimination, and eradication. Impact Goal 1.2 measures progress towards control, elimination, or eradication targets of vaccine-preventable diseases, endorsed at either the global or regional level. When compared to IA2030's baseline year, each year should see more countries achieving the targets and avoiding backsliding.

One great risk of lowered vaccine coverage is backsliding in achieving measles elimination. Progress toward achieving, maintaining, and regaining measles elimination targets has stalled. Figure 7 shows 37 MICs ineligible for Gavi support have not achieved measles elimination targets. Several non-Gavi MICs that re-established measles transmission after large outbreaks have not been able to regain their elimination status. Twenty-two MICs ineligible for Gavi support have not achieved a target set for rubella elimination.

Figure 7. Status of eradication and elimination targets for Measles, Rubella, Maternal and Neonatal Tetanus, and Wild Poliovirus in 2021

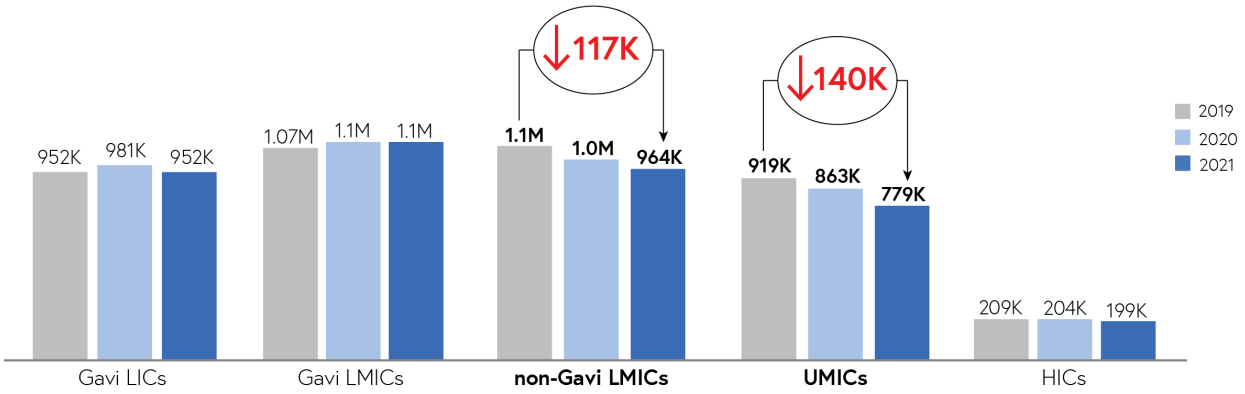


Vaccine-averted deaths

Coverage declines for nearly all antigens mean Impact Goal 1.1, the modelled number of deaths averted by immunization, is off-track to reach 50 million deaths averted from 2021-2030. MICs unsupported by Gavi show a greater decline in the number of future deaths averted during pandemic years (2020-2021) than in countries with Gavi support. This was caused by vaccine coverage declines and a high number of zero-dose children, as described above.[6]

[6] WHO/UNICEF Immunization Coverage estimates, estimates of deaths averted from Vaccine Impact Modeling Consortium (VIMC), Global Burden of Disease

Figure 8. Expected number of future deaths averted through immunization.



IV. CONCLUSION

Limitations

Many of these indicators represent the status of immunization systems mid-pandemic, nearly two years ago. However, these data remain highly relevant as filling the gaps revealed in 2021 data requires many years of redoubled effort, as well as the investments of financial and technical resources.

Conclusions

While non-Gavi-MICs have large populations and significant vaccine-preventable disease, especially in non-Gavi LMICs, countries with this classification do not receive significant immunization services funding or internationally coordinated technical support. Technical and financial support will need to be tailored to suit country-specific needs. Promising new initiatives like Gavi's MICs Approach should be joined by additional efforts to increase political will and domestic financing, while addressing vaccine demand and service issues, ensuring sufficient coverage of existing vaccines. In particular, MICs should accelerate introduction and scaling up of PCV, rotavirus, and HPV vaccines to rapidly reduce vaccine-preventable disease in MICs. Coordinated action should also address unaffordable vaccine prices which further limits new vaccine introductions.

Worrisome trends and pandemic-exacerbated inequities across nearly all IA2030 Impact Goal indicators are apparent. Visualizing inequities in vaccine access based on donor eligibility may foster greater engagement by current and newer partners to take steps to address barriers, strengthen immunization systems, and ensure life-saving services reach infants, children, and adolescents worldwide.

About the IA2030 Scorecard:

The IA2030 Scorecard visualizes the monitoring and evaluation indicators of the **IA2030 Framework for Action** endorsed in 2020 by the World Health Assembly, with the support of countries and partners. The scorecard is a collaborative effort led by the IA2030 effort with support from USAID's MOMENTUM Country and Global Leadership.

The Performance of Middle-Income Countries: Impact Goals, Baseline-2021 was developed by the Immunization Agenda 2030 Working Group on Middle-Income Countries, co-led by Nathalie Vande Maele (WHO) and Blandine Bourgoin (Clinton Health Access Initiative), with support from the Scorecard team.

Recommended Citation

Immunization Agenda 2030 Working Group on Middle-Income Countries. Performance of Middle-Income Countries: Impact Goals, Baseline-2021. May 2023. https://immunizationagenda2030.org/

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Draft Summary for Comment

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