Progress and Challenges with Achieving Universal Immunization Coverage

2021 WHO/UNICEF Estimates of National Immunization Coverage (WUENIC)

Sources:

- 2022 Member State reports to WHO and UNICEF
- The 2022 World Bank Development Indicators Online
- United Nations, Population Division, 2022 revision

Estimates as of July 15th, 2022. Include data reported until July 7th, 2022

https://www.who.int/data/immunization
http://www.data.unicef.org/child-health/immunization

World Health Organization

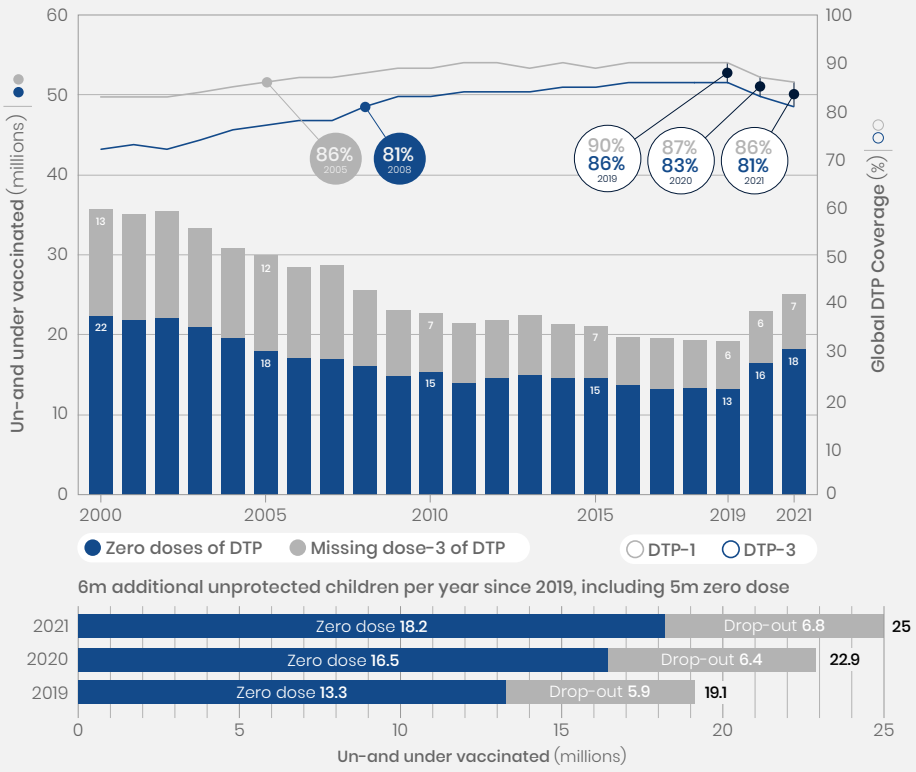
unicef

25 million children were un-or under-vaccinated in 2021, 2 million more than in 2020, and 6 million more than in 2019

Coverage of the third dose of diphtheria, tetanus, and pertussis vaccine (DTP-3) dropped a further 2% compared 2020, to 81% in 2021, leaving 25 million children vulnerable to vaccine-preventable diseases

The Immunization Agenda 2030 aims to make vaccination available to everyone, everywhere, by 2030. The Covid-19 pandemic, associated disruptions, and Covid-19 vaccination efforts have strained health systems in 2020 and 2021, resulting in 25 million children missing out on vaccination, 6 million more than in 2019 and the highest number since 2008. The number of children missing out on any vaccination - "zero-dose children" – increased by 5 million in 2021 compared with 2019, going from 13 to 18 million.

In this analysis, zero-dose children are those who lack any dose of DTP. Under-vaccinated are those who received one dose, but not a third protective dose.

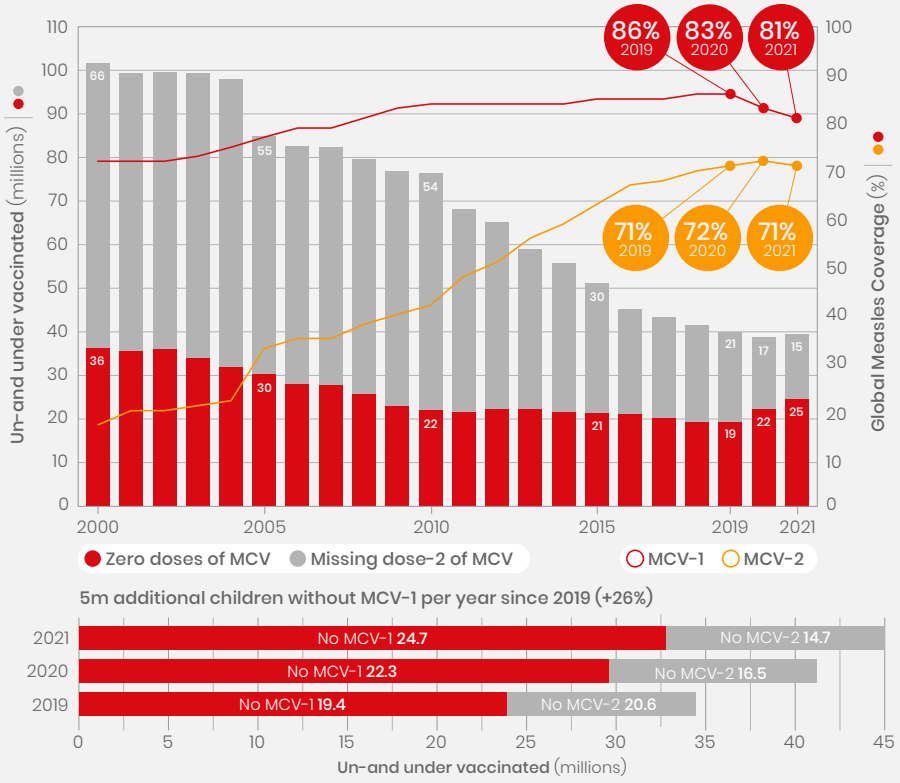


First dose measles coverage dropped to 81% in 2021, leaving 5 million more children unvaccinated compared to in 2019

Coverage of the first dose of measles-containing vaccine (MCV-1) dropped to 81% in 2021, the lowest level since 2008.

This leaves 25 million children vulnerable. An additional 15 million children received only a first dose, but not a needed second dose through regular public health services.

Supplemental Immunization Activities (including campaigns) continue to be required to ensure that all children receive the 2 doses that will protect them from measles.



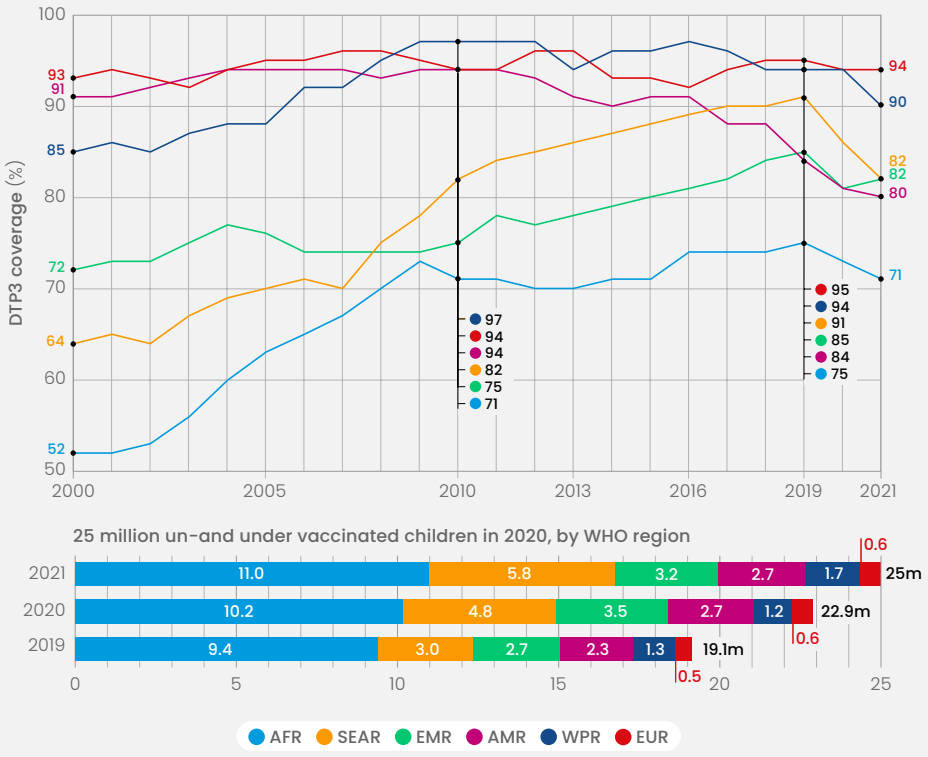
Immunization coverage in the WHO South-East Asian Region had the sharpest decline during the COVID-19 pandemic years of 2020/21

Essential immunization service coverage dropped in all WHO Regions.

The South-East Asian Region was most affected with a drop of 9% over two years. The Region of the Americas, the African Region, and the Western Pacific Region all dropped 4%, the Eastern Mediterranean Region dropped 3% and the European Region limited its drop to 1%.

Significant efforts will be needed to recover from the strains experienced during the pandemic, catch up missed children, and to sustain immunization as an essential health service.

In this analysis, zero-dose children are those who lack any dose of DTP. Under-vaccinated are those who received one dose, but not a third protective dose.



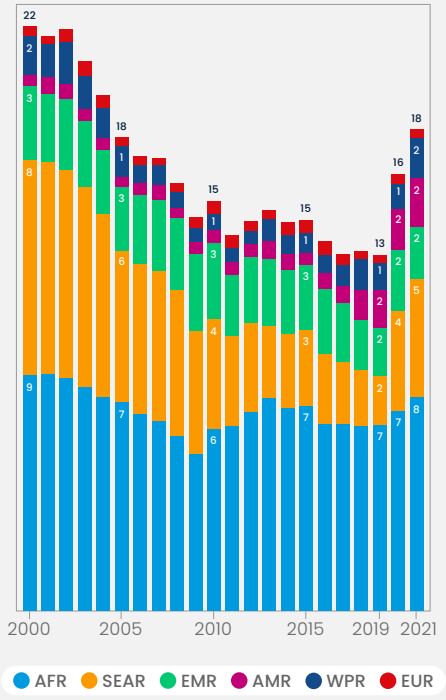
The number of zero-dose children increased sharply during the 2020-2021 pandemic years

The number of zero-dose children – those never vaccinated with even a first dose of DTP-containing vaccine, increased by 37%, from 13 to 18 million since 2019.

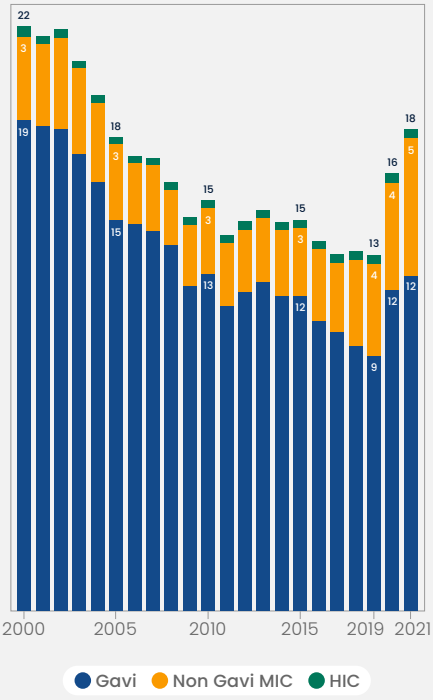
18 million children were left out by immunization services in 2021, a number not seen since 2005. Almost all zero-dose children live in low- and middle-income countries, especially in the African and South-East Asian regions.

In this analysis, zero-dose children are those who lack any dose of DTP. Under-vaccinated are those who received one dose, but not a third protective dose.

Zero dose children by WHO region



Zero dose children in Gavi countries

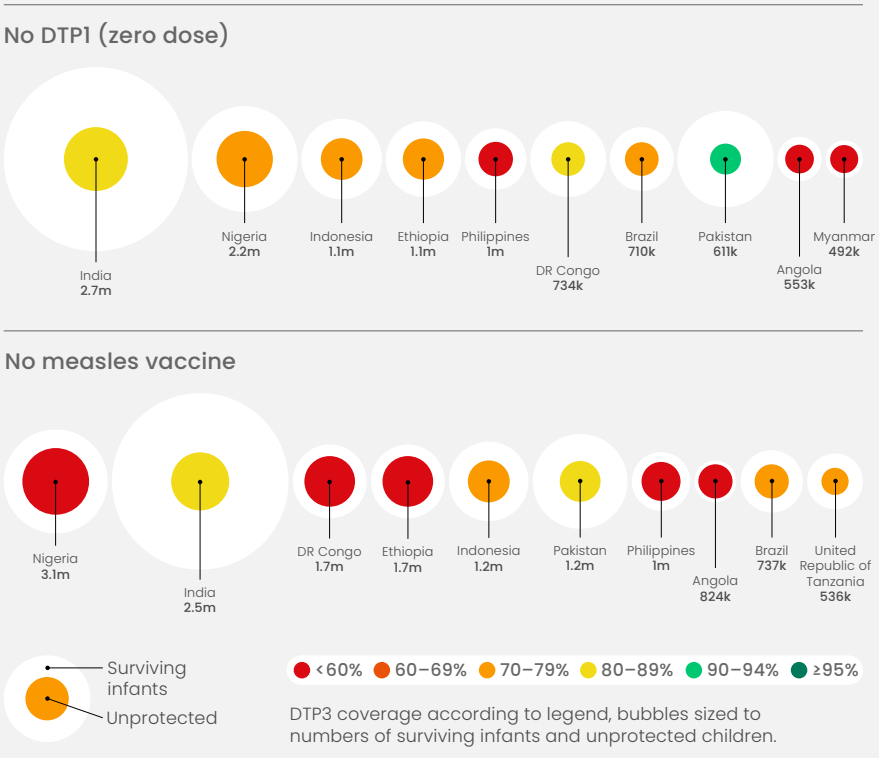


Countries with the most unprotected children in 2021

Just 10 countries account for 62% of zero-dose children. Roughly the same countries also account for 59% of the children missing out on a measles vaccine.

"Zero-dose children" lack DTP, which indicates that they are not served through routine services, although they may be reached through disease-specific Supplemental Immunization Activities (SIA). They are likely to miss out on other essential health services as well.

Measles estimates do not include doses delivered through campaigns.



Recovery from the 2020 and 2021 backsliding is needed to reach the objectives of the Immunization Agenda 2030

The challenges posed by the pandemic jeopardize the objectives of the Immunization Agenda 2030.

IA2030 aims to leave no one behind with immunization and calls on all countries to reduce the number of "zero dose children" by half by 2030.

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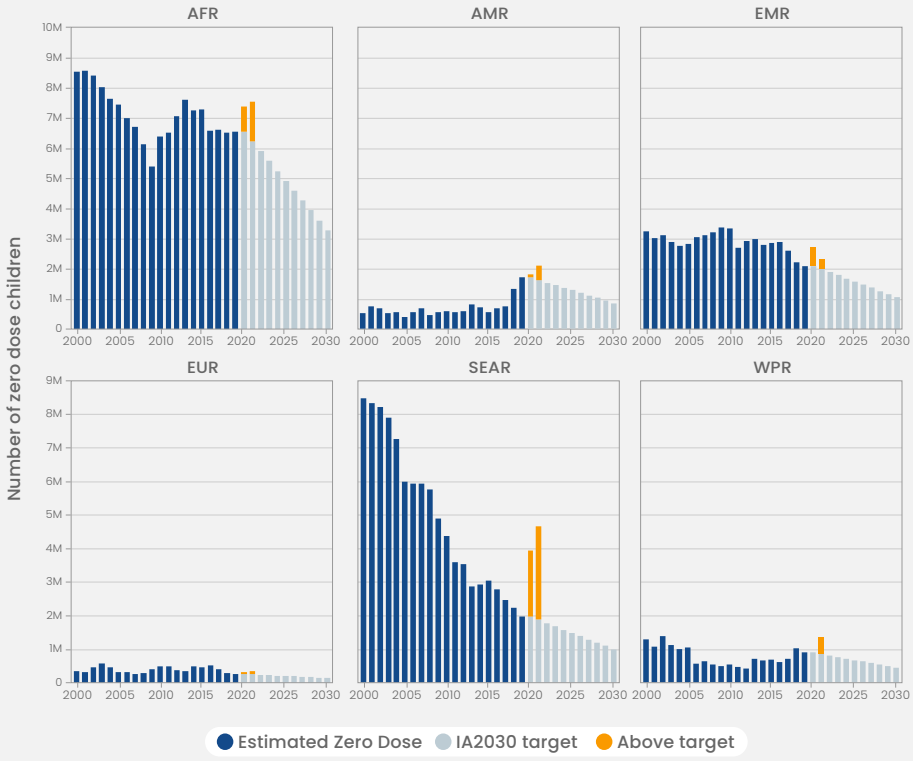

Demographics in Africa add to the challenge of reaching everyone

The United Nations Population Division expects the African population to keep growing and reach a birth cohort of well over 40 million by 2030.

Many countries in the African Region have some of the lowest coverage and weakest health systems, although notable exceptions exist. Annually increasing birth cohorts represent an additional headwind for immunization programmes in these countries.

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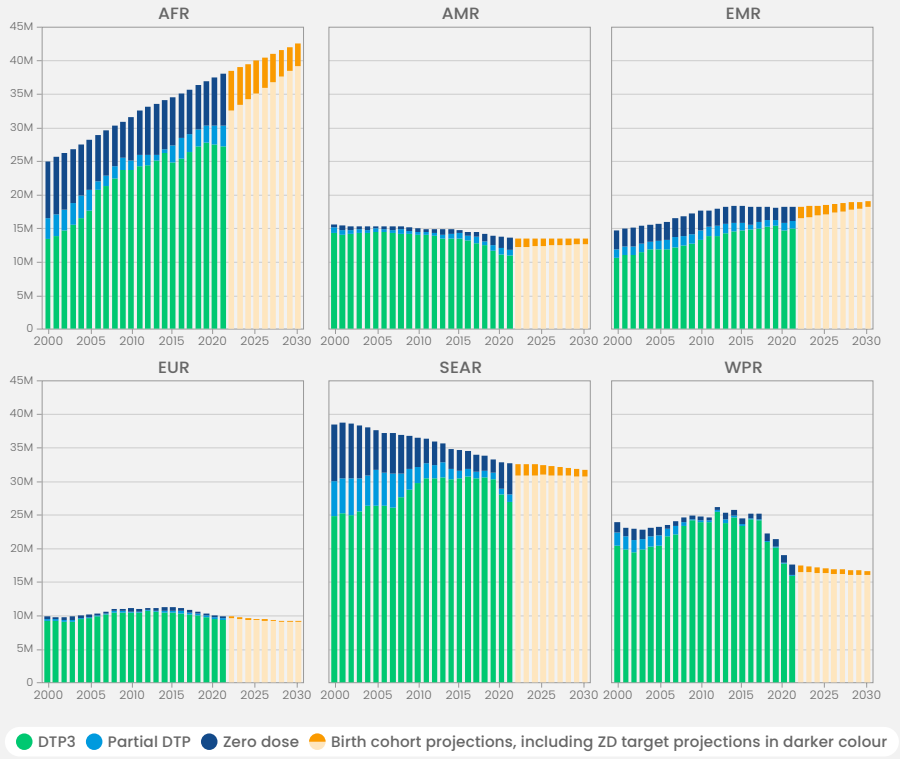


Zero-dose children in 2021: Top 10 countries

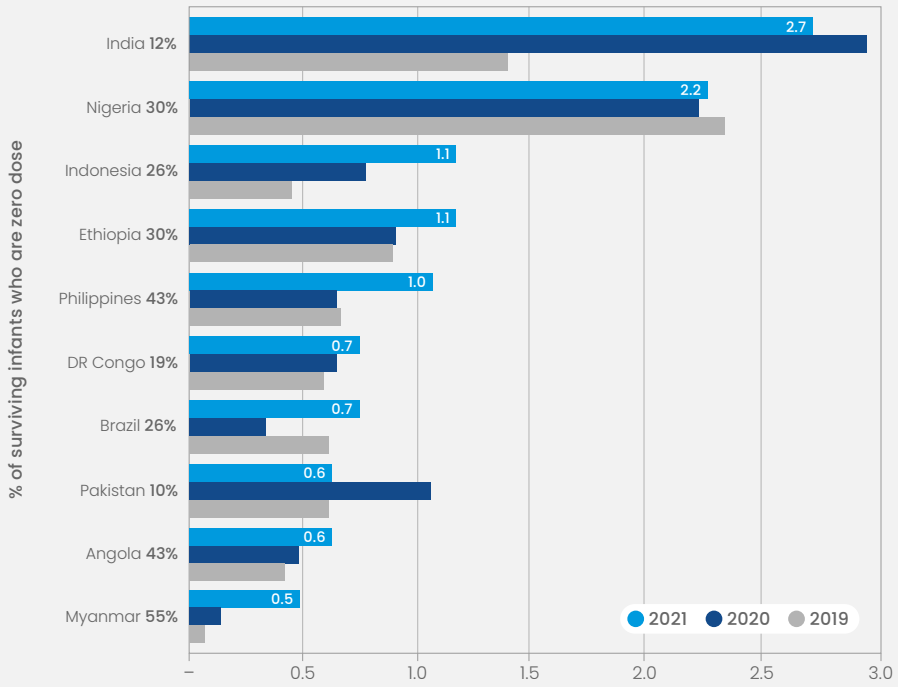
Countries with most unprotected children

10 countries account for 11 of the 18 million zero-dose children in the world (62%). This list includes some countries with moderate coverage and very large birth cohorts, and other countries with substantially lower coverage.

This list is dominated by Lower-Middle-Income countries (LMIC). Only the Democratic Republic of the Congo and Ethiopia are classified as low-income countries (LIC) by the World Bank.

India, Indonesia, the Philippines and Myanmar show large increases in the numbers of children without access to vaccination over the last few years.

Zero-dose children are defined as those lacking DTP 1 in this analysis.



Millions of "zero-dose" children, defined as lacking a single dose of DTP-containing vaccine.

Just 10 countries account for 59% of children who missed the first dose of a measles vaccine

Countries with most unprotected children

10 countries account for 14.6 of the 24.7 million children who missed a first dose of measles vaccine in the world (59%). This list includes some countries with moderate coverage and very large birth cohorts, and other countries with substantially lower coverage.

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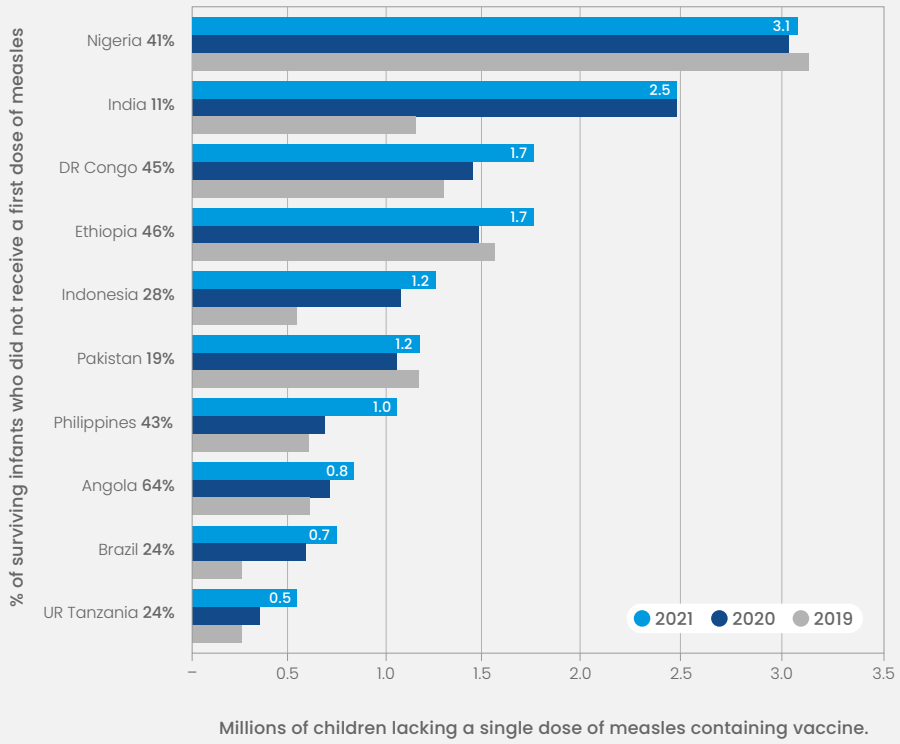

Compared with 2019, the number of zero-dose children increased sharply during the pandemic (2019 vs. 2021).

The number of zero-dose children – those never vaccinated with even a first dose of DTP-containing vaccine, increased by 37%, from 13 to 18 million.

18 million children were left out by immunization services in 2021, a number not seen since 2005. Almost all zero-dose children live in low- and middle-income countries, especially in the African and South-East Asian regions.

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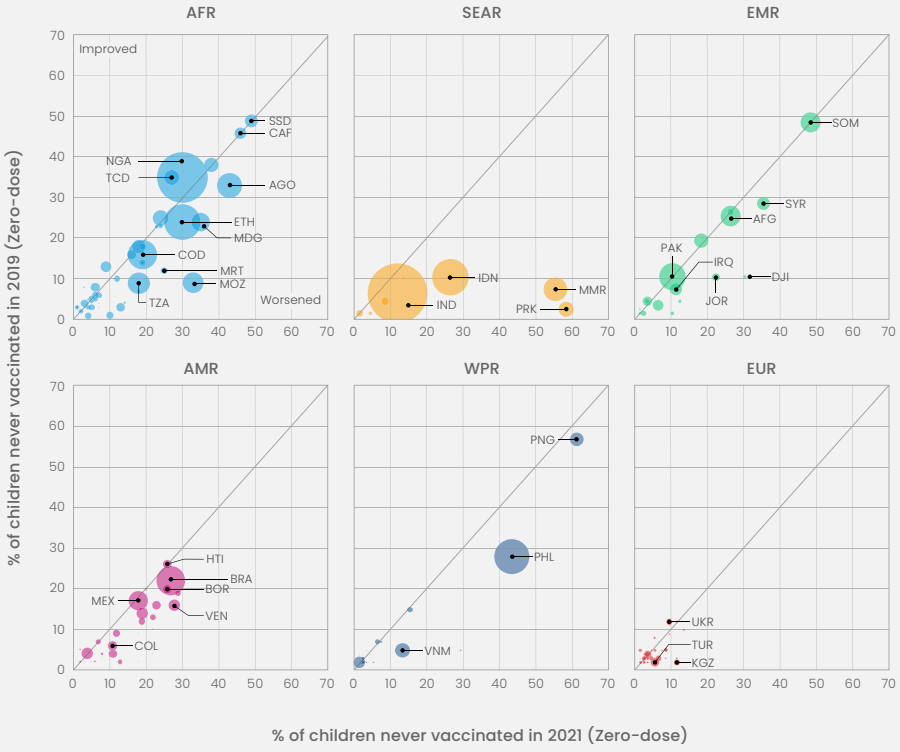


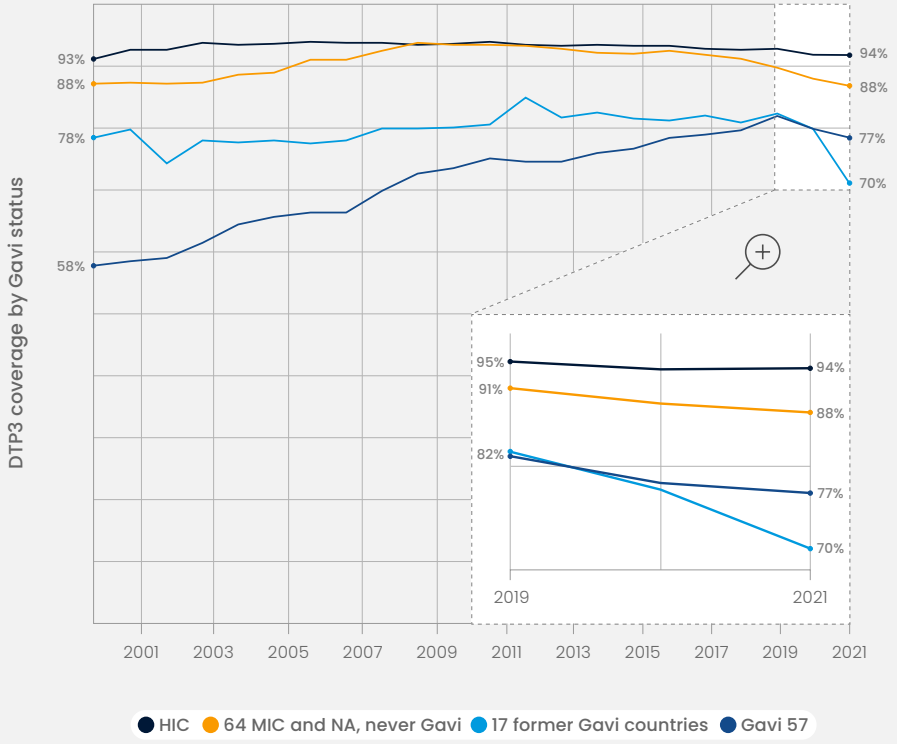
Low-and Middle-Income countries experienced a larger setback than higher-income countries

The Gavi Alliance provides vaccine and financial support to low- and middle-income countries (LMIC) countries since the year 2000

This support has allowed many LMICs to narrow coverage gaps with wealthier countries. However, coverage declined sharply since 2019 in countries that transitioned out of Gavi support, while those supported by Gavi were affected less severely.

This highlights that coverage gains remain fragile and programmes in LMICs are not yet as resilient to shocks as countries with longstanding strengths in immunization programmes.

"Gavi 57" refers to the list of 57 currently supported countries and excludes graduated countries



The number of children who are never reached by essential immunization increased sharply during the pandemic in each of two years.

The number of zero-dose children – those never vaccinated with even a first dose of DTP-containing vaccine, increased by 37%, from 13 to 18 million.

18 million children were left out by immunization services in 2021, a number not seen since 2005. Almost all zero-dose children live in low- and middle-income countries, especially in the African and South-East Asian regions.

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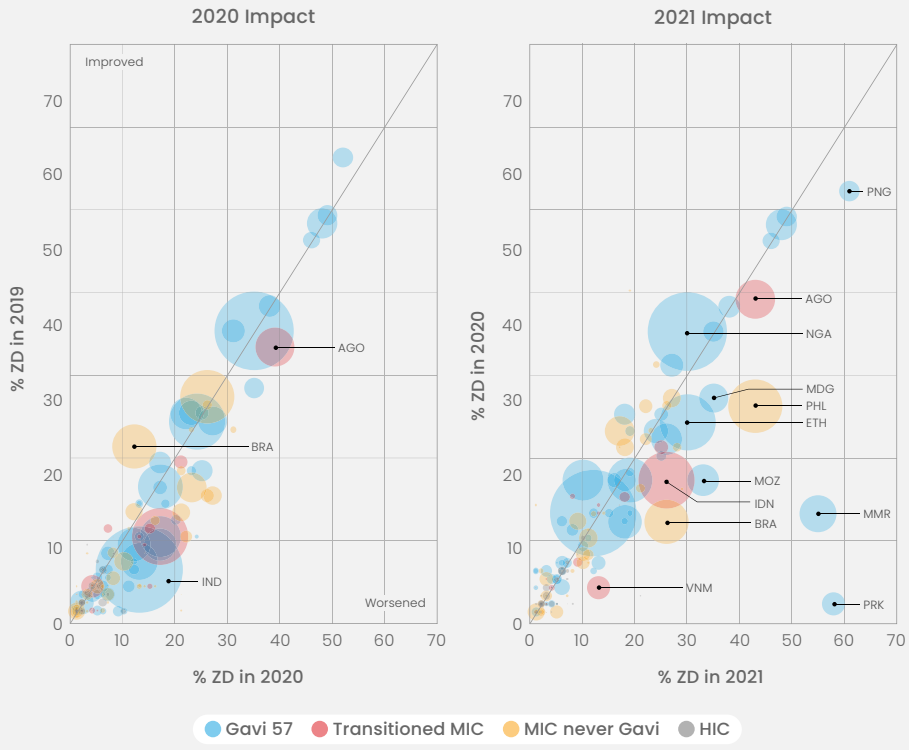
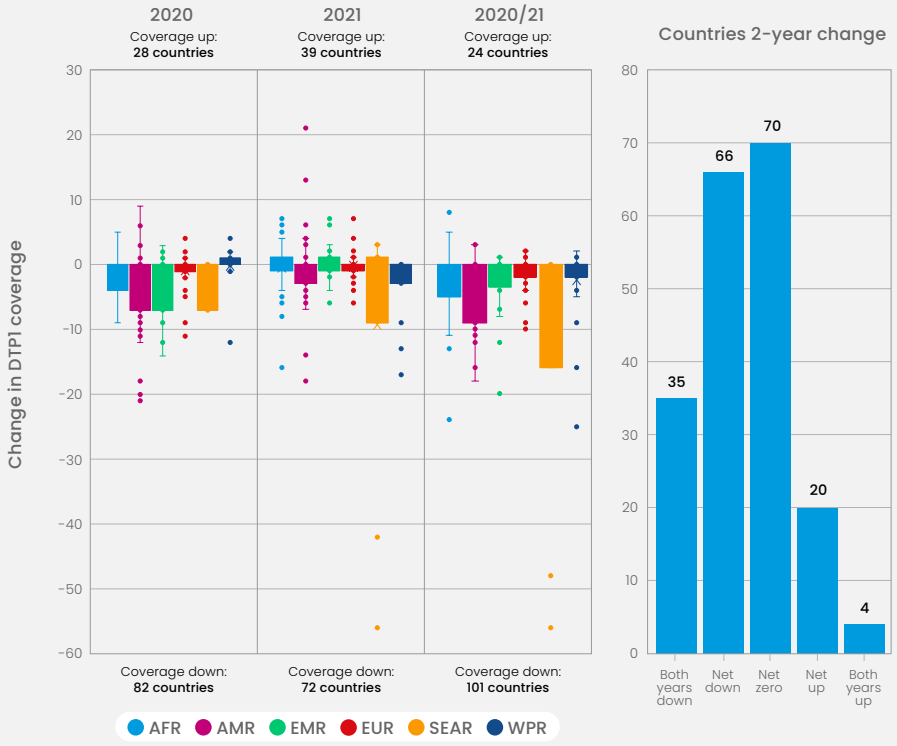


Few countries achieved improvements in coverage during the pandemic

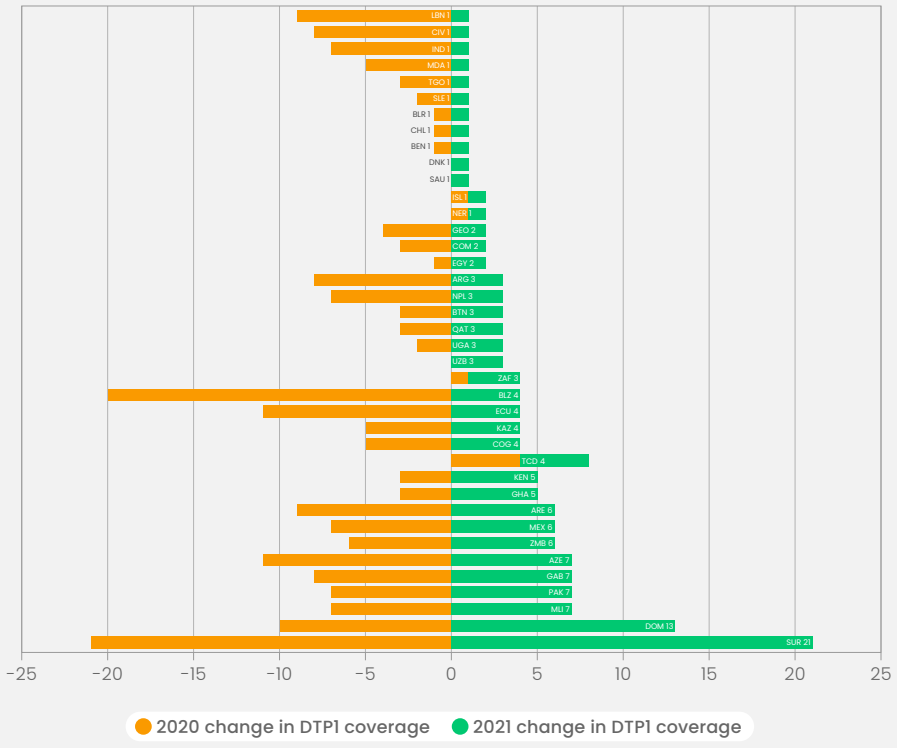
The COVID-19 pandemic and the response in 2020 affected immunization coverage among countries in all regions. 39 countries recovered to some extent in 2021, but over two years, only 24 countries achieved higher coverage in 2021 than in 2019.



39 countries managed an improvement in coverage in 2021.

39 countries recovered to some extent in 2021.

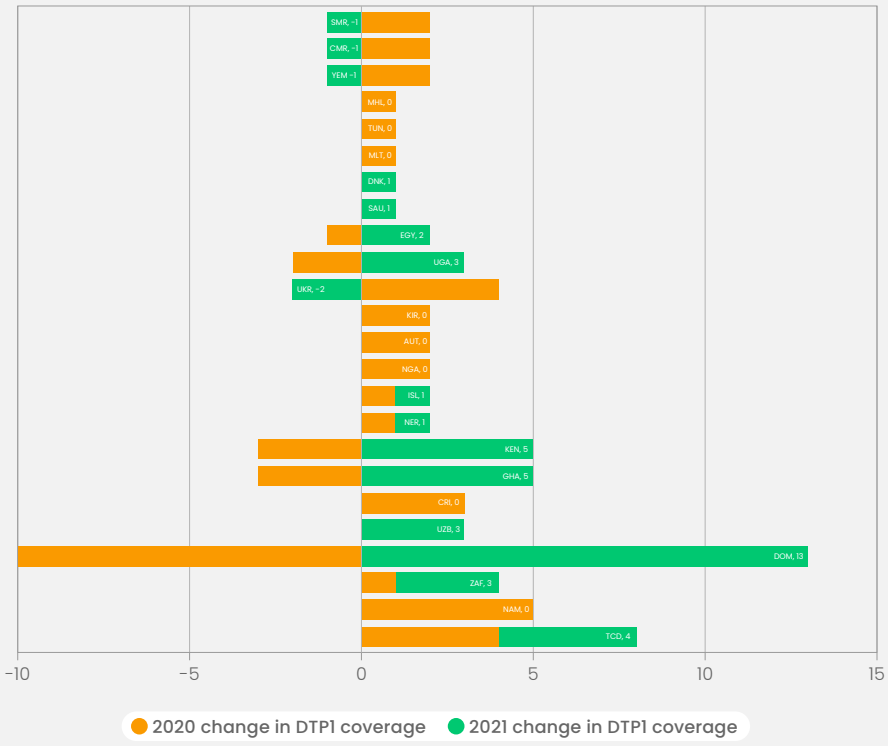
15 in AFR, 7 in AMR, 6 in EMR, 8 in EUR and 7 in SEAR



24 achieved net improvements in coverage between 2019 and 2021.

24 countries achieved higher coverage in 2021 than in 2019.

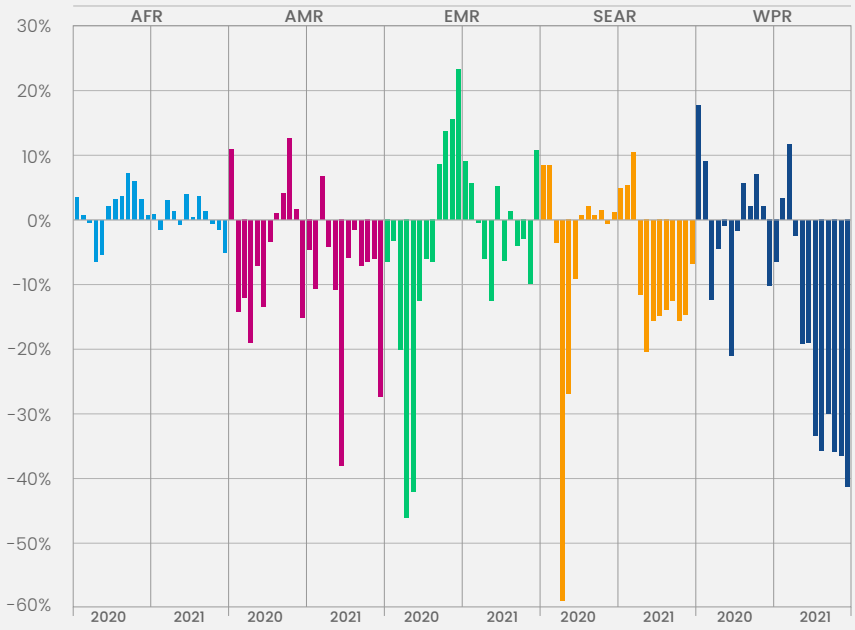
9 in AFR, 2 in AMR, 4 in EMR, 7 in EUR and 2 in WPR



Disruptions caused by the Covid-19 pandemic and vaccination efforts

Patterns of disruption and recovery across regions

Monthly reported data, by a subset of member states, shows the impact of COVID-19 disruptions and the vaccine response for five out of six WHO regions.



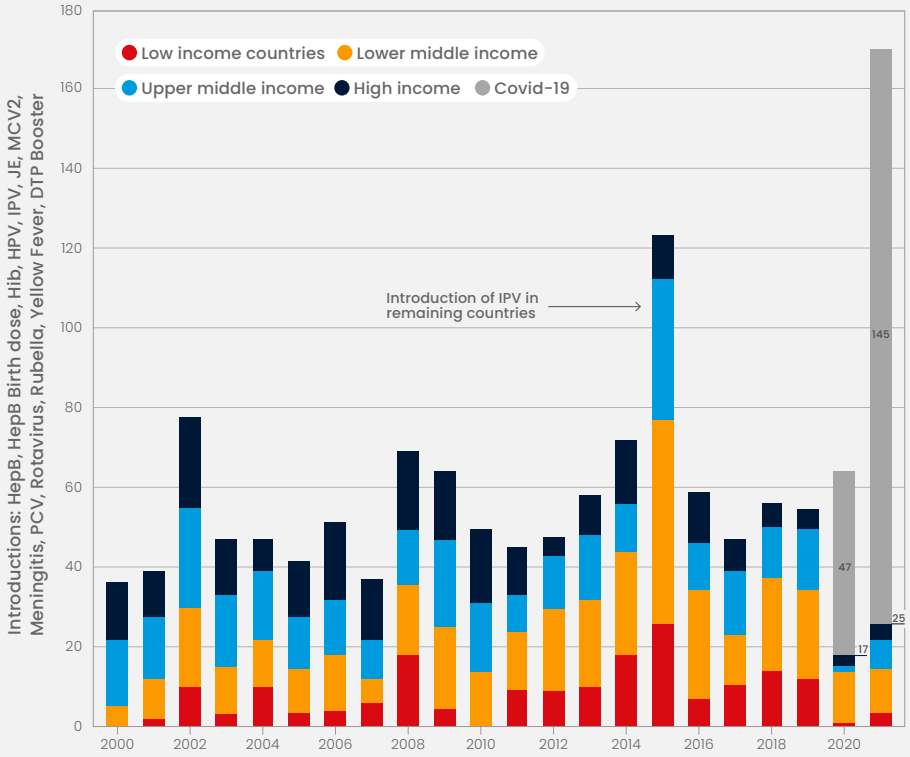
Countries and corresponding percentages of the cohort in each region included in the analysis

AFR	AMR	EMR	SEAR	WPR
47	5	21	11	27
97%	45%	59	100%	18%

2021 had greatest number of vaccine introductions ever in a single year, though driven by COVID-19 vaccine and few other introductions

Along with a dip in coverage, the pace of non-COVID new and under-utilized vaccine introductions has also slowed down abruptly in 2020, and only slightly picked up in 2021

25 vaccine introductions were reported in 2021, up from 17 in 2020, but well below the long-run average of around 50 per year in previous decades. However, 192 Member States introduced COVID-19 vaccines in 2020 and 2021.



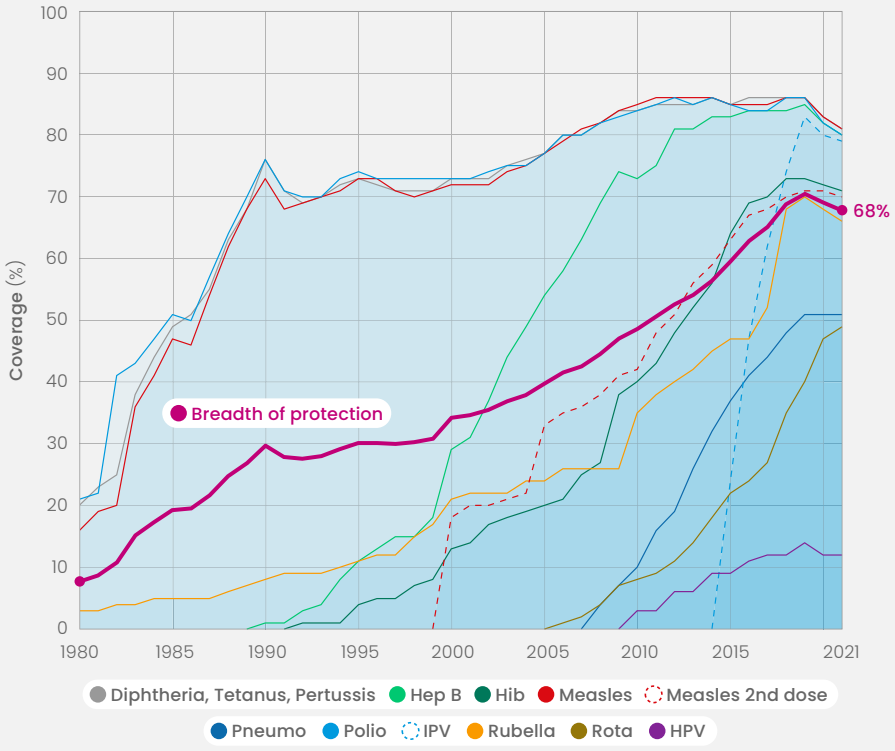
New vaccines have been scaled up across the world, providing an increasing breadth of protection for children but this has fallen back in 2020 and 2021 for the first time since 1990

In 2021, the average coverage for vaccines targeting 11 diseases stood at 68% compared with 8% in 1980.

The breadth of protection is a cross-sectional programme performance indicator, defined as the average global coverage achieved for a set of globally recommended antigens across multiple age ranges.

This list includes polio, measles*, rubella, diphtheria, tetanus, pertussis (DTP), hepatitis B (Hep-B), *Haemophilus influenzae type B* (Hib), Pneumococcal vaccine, Rotavirus Vaccine, Inactivated Polio Vaccine (IPV**), and Human Papilloma Virus vaccine (HPV).

** Includes first and second doses*
*** IPV coverage in the part of the population that receives IPV in addition to oral polio vaccines*

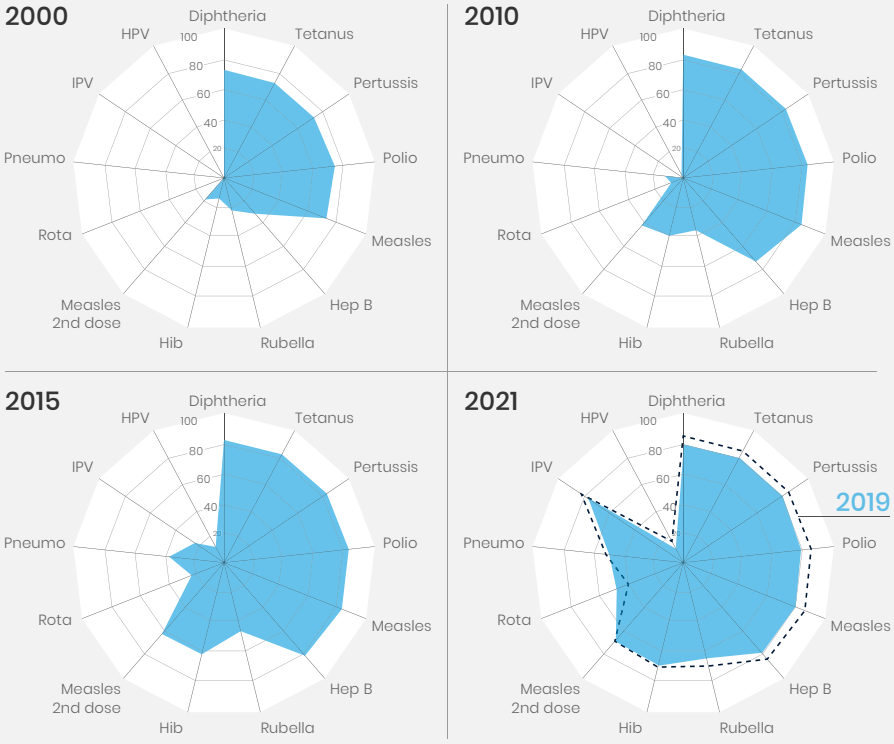


New vaccine introductions have expanded the breadth of protection more than increases in access to vaccination services; in 2021 that breadth of protection shrunk for all antigens except rotavirus

After 2010, no real progress has been achieved with expanding vaccination coverage to un-and under served populations.

However, those that are reached have benefitted from a wider portfolio of vaccines and are protected against many more diseases.

For each antigen, coverage with the dose that completes the recommended schedule is shown



Downward trend in HPV vaccine coverage continued: HPV coverage down by >15% since 2019

HPV vaccines have been introduced in 116 countries that represent a third of the global population of girls.

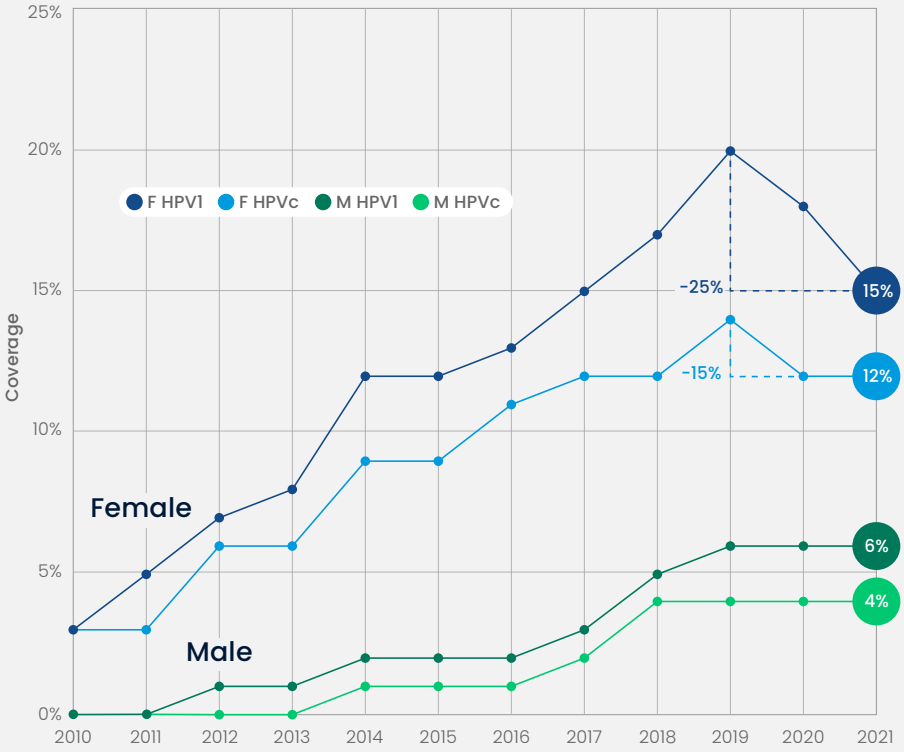
HPV vaccine coverage is on downwards trend reflecting COVID-19 pandemic effects. Only 12% of girls are fully protected.

Currently a third of the world's population of girls 9-14 years of age live in countries that provide the HPV vaccine.

Globally, the mean coverage HPV programmes achieve is 55% for the first and 44% for the last dose of HPV.

This low coverage combined with the large population that lacks access to HPV vaccines results in a very low global coverage of 12%.

The number of countries providing male vaccination has increased to 42.



HPV Vaccine coverage decreased in 2021 in L&MIC

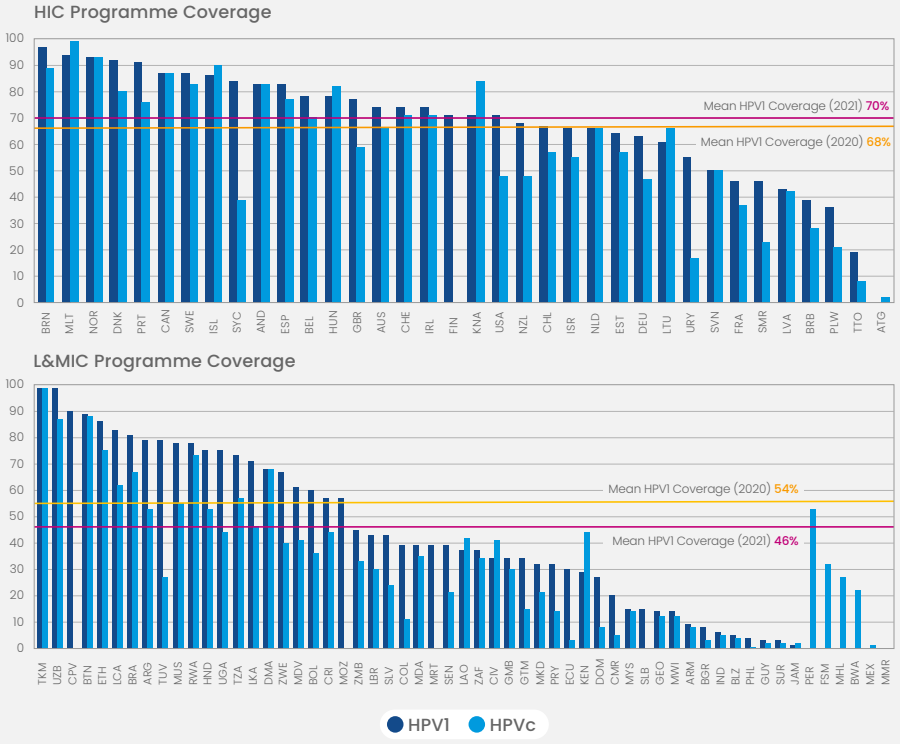
Coverage is on a downward trend in L&MIC while HIC keep showing resilience

Urgent action is required to improve HPV vaccine coverage and vaccinate missed cohorts of girls

In L&MIC mean first (46%) and final dose (33%) coverage declined further in 2021. HIC showed modest improvements.

Dropout continues to be a specific challenge for HPV vaccination programmes, particularly in L&MIC.

COVID-19 pandemic continued to affect performance of HPV programme in L&MICs through school closures, delayed vaccination rounds but also product stockouts.

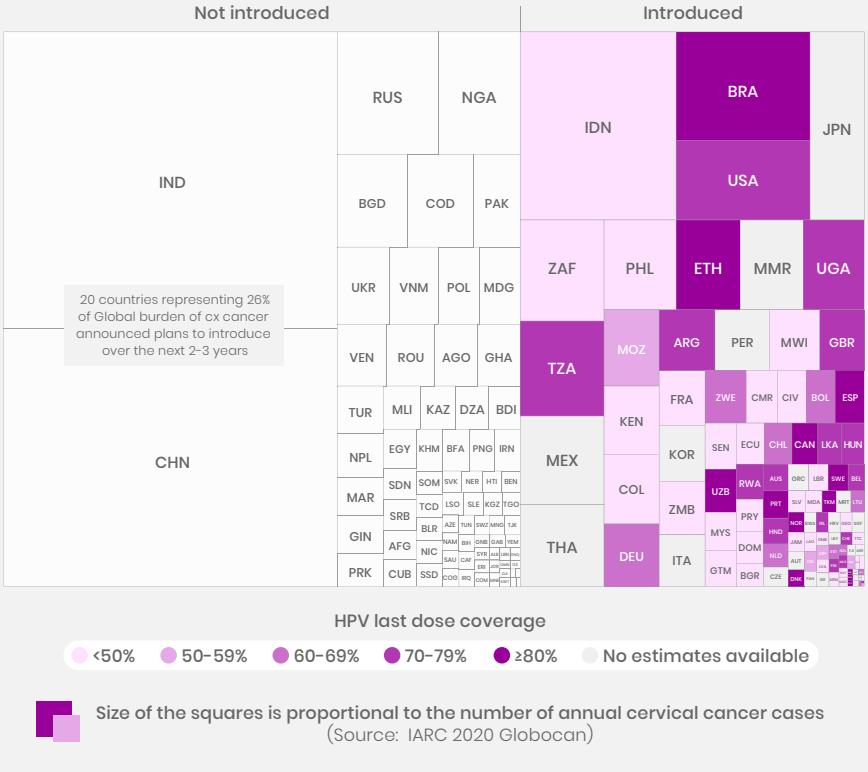


59% of cervical cancer cases occur in countries that have not yet introduced HPV vaccination

The 116 countries that have introduced HPV vaccine together represent 41% of the global burden of cervical cancer (GLOBOCAN 2020, IARC)

To reduce the global burden and reach elimination by the end of the century, it is critical that HPV vaccine is introduced in all countries particularly those with high incidence, as well as low or medium incidence countries with large populations.

Low HPV vaccine coverage leads to many girls still not being protected against cervical cancer despite the HPV vaccine being introduced.



The number of girls in countries with HPV who never received a first dose increased during the COVID-19 pandemic in most regions.

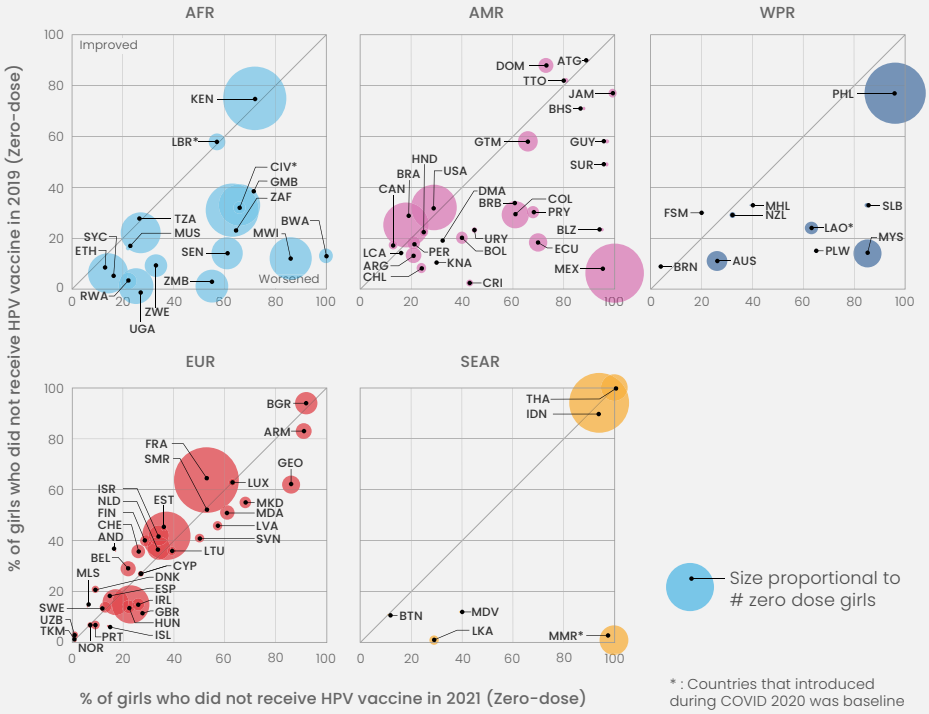
The number of zero-dose girls (who never received a first dose of HPV vaccine) increased by 3.5 Million globally since 2019.

For million of girls HPV vaccination was affected by COVID pandemic when immunization services were interrupted or delayed in 2021.

The number of girls who received HPV vaccine increased year on year since 2010, but has been decreasing in many regions and countries since 2019.

The number of girls who did not receive any HPV dose increased in most regions – with the European region the notable positive exception

In this analysis, zero-dose girls are those who lack any dose of HPV. since 2019



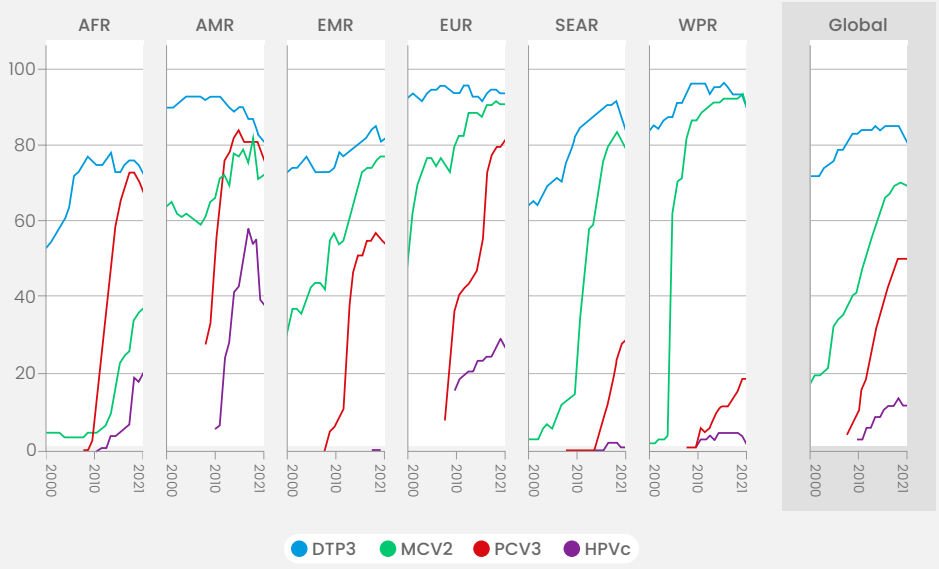
Vaccination is important across the life course and measured through an indicator of the Sustainable Development Goals (SDG 3.b.1) whose coverage which has had substantial backsliding during the pandemic

Vaccination is expanding from its childhood focus to a lifetime approach.

DTP containing vaccine has long been used to monitor the ability of immunization programmes to deliver at least three doses of basic vaccines to infants (DTP-3). PCV3 reflects the uptake of new and underused vaccines in the first year of life.

The second dose of Measles (MCV-2) signals programme's ability to continue services into the second to fifth years of life. Some large countries in the African region have yet to introduce this dose into their schedule, explaining lower coverage there.

Vaccinating adolescent girls with Human Papilloma Virus vaccine (HPVc) is critical for achieving cervical cancer elimination. Progress is still uneven across regions.

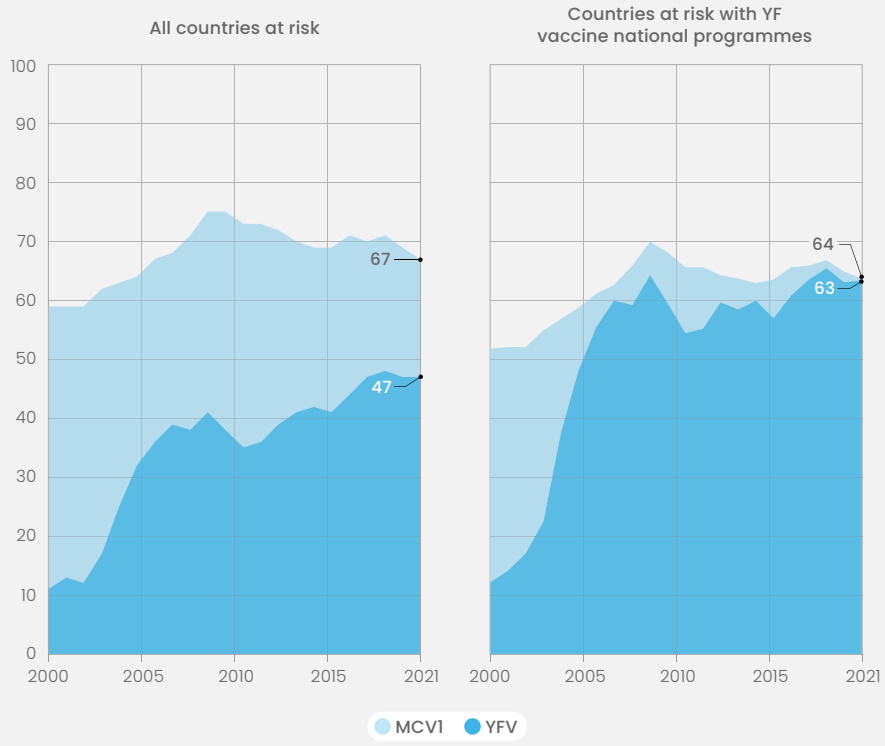


Vaccination coverage in countries at risk for Yellow Fever is too low

Yellow Fever Vaccine (YFV) coverage in all countries at risk stood at 47% in 2021. That is too low to avoid outbreaks, and frequent high-quality supplementary campaigns are required.

To improve coverage, YFV need to be introduced in the countries at risk that have not done so yet (Ethiopia, Sudan, South Sudan, and Uganda). Furthermore, in countries where the vaccine is used, coverage is too low for effective disease control.

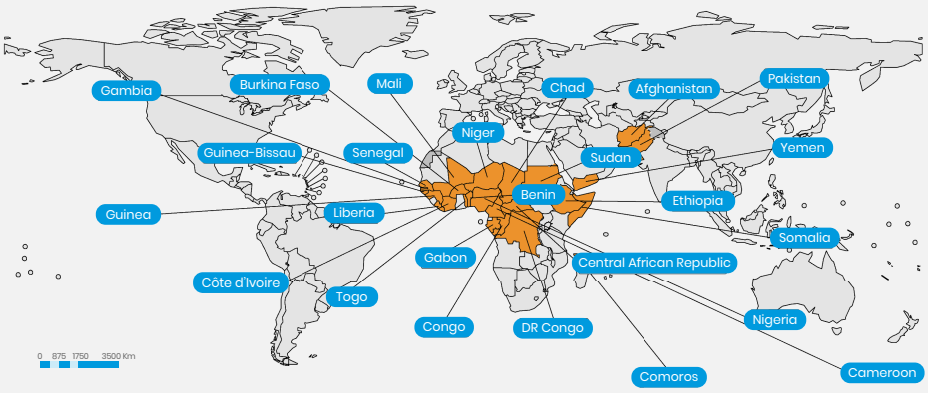
The first dose of measles vaccine is administered at the same age as YFV, and coverage is therefore expected to be similar. The graph on the right shows that coverage of these two vaccines in countries with both vaccines in the national schedule converged in the last few years.



Measles outbreaks are rife again in low- and middle-income countries

After two years of lower than usual routine immunization coverage, and the postponement of many supplementary immunization activities (including campaigns), the risk of large outbreaks is now very real.

While reported cases of measles are still below the levels seen during the worldwide surge in 2019, a cyclical high, large and disruptive outbreaks are again being detected in the African and the Eastern Mediterranean regions.



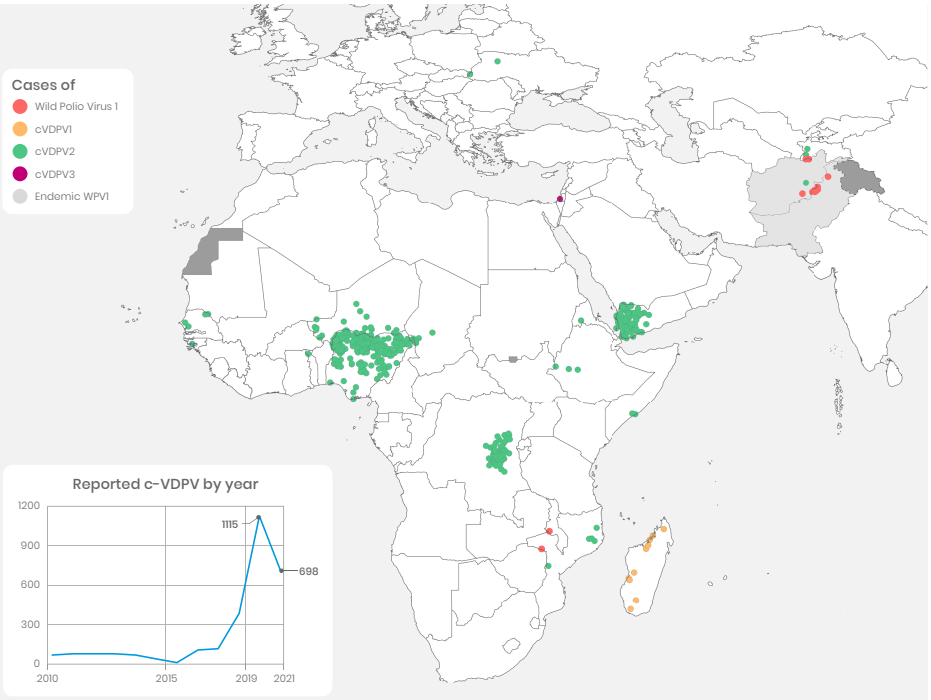
Map production: World Health Organization (WHO), 2022. All rights reserved
Data source: IVB Database

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area nor of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Circulating vaccine-derived poliovirus (cVDPV) is expanding in countries with low immunization coverage

Vaccine-derived poliovirus can circulate in settings with large immunity gaps. The number of cases has increased sharply since 2019, highlighting weaknesses in immunization coverage that preceded the pandemic and are at risk of worsening as a result of the backsliding in coverage, unless urgent catch-up activities are implemented.

Wild Polio Virus 1 (WPV1) is only endemic in Pakistan and Afghanistan, but cases have been detected in Africa in 2021 and 2022.



Global Wild polio and cVDPV Cases from July 2021 to June 2022, courtesy GPEI

Excludes viruses detected from environmental sureillance. Data as of 5 July 2022

Resources on catch-up and immunization recovery

Catch-up vaccination landing page
www.who.int/teams/immunization-vaccines-and-biologicals/essential-programme-on-immunization/implementation/catch-up-vaccination

Leave No One Behind: Guidance for planning and implementing catch-up vaccination (EN,FR,PT)
www.who.int/publications/i/item/leave-no-one-behind-guidance-for-planning-and-implementing-catch-up-vaccination

WHO Recommendations for interrupted or delayed vaccination (EN,FR)
https://www.who.int/publications/m/item/table-3-who-recommendations-for-routine-immunization

Catch-up vaccination videos (EN,FR coming soon):

Administering catch-up vaccination
https://watch.immunizationacademy.com/en/videos/807

Managing multiple injections
https://watch.immunizationacademy.com/en/videos/805

How to record and report catch-up vaccination
https://watch.immunizationacademy.com/en/videos/806

Technical Resources for Improving Immunization Coverage and Equity
www.technet-21.org/en/library/manage-resources/main/7095-technical-resources-for-improving-immunization-coverage-and-equity

Immunization as an essential health service: guiding principles for immunization activities during the COVID-19 pandemic and other times of severe disruption (EN)
www.who.int/publications/i/item/immunization-as-an-essential-health-service-guiding-principles-for-immunization-activities-during-the-covid-19-pandemic-and-other-times-of-severe-disruption

Guiding principles for recovering, building resiliency, and strengthening of immunization in 2022 and beyond (EN) https://www.technet-21.org/media/com_resources/trl/7945/multi_upload/GuidingPrinciplesforImmunizationProgrammeRecovery.pdf

(FR) www.technet-21.org/en/library/main/7946-principes-directeurs-de-la-reprise,-de-la-promotion-de-la-résilience-et-du-renforcement-de-la-vaccination-en-2022-et-au-delà

Missed Opportunities for Vaccination resource guides (EN,FR)
www.who.int/teams/immunization-vaccines-and-biologicals/essential-programme-on-immunization/implementation/reducing-missed-opportunities-for-vaccination-(mov)

Vaccination in the second year of life (2YL) guides and resources (EN,FR,PT)
www.who.int/teams/immunization-vaccines-and-biologicals/essential-programme-on-immunization/integration/vaccination-in-the-second-year-of-life-(2yl)