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for every child

EXECUTIVE SUMMARY

THE STATE OF THE WORLD'S CHILDREN 2023

# For Every Child, Vaccination



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Via degli Alfani, 58

50121 Florence, Italy

Tel: (+39) 055 20330

Email: [florence@unicef.org](mailto:florence@unicef.org)

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**Cover photo:** In Yemen, seven-year-old Hind Ali Nasser holds her arm after being vaccinated as part of an outreach campaign.

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THE STATE OF THE WORLD'S CHILDREN 2023

# For Every Child, Vaccination

The world is facing a red alert for children's health: Vaccination coverage dropped sharply during the COVID-19 pandemic, leaving millions more children unprotected against some of childhood's most serious diseases. In addition, many millions of children from some of the world's most marginalized communities have long missed out on life-saving vaccination. Catch-up and recovery are needed urgently to vaccinate the children missed and to avoid further backsliding. And greater effort is needed to reach the children historically left behind.

*The State of the World's Children 2023* examines what needs to happen to ensure that every child, everywhere is protected against vaccine-preventable diseases. In the wake of the COVID-19 pandemic, which set back progress in childhood immunization globally, it focuses on the role of poverty, marginalization and gender in determining whether or not children are vaccinated. Drawing on lessons learned during the pandemic and from UNICEF's decades-long expertise and experience in vaccinating children, the report examines the ways in which primary health care can be strengthened to better support immunization services. It looks, too, at concerns around trust in vaccines. And it examines a range of innovations in vaccine development and delivery and in financing.



**Catherine Russell**  
UNICEF Executive Director

# Foreword

Human history is full of stories of disease and pestilence. But the story of vaccines has radically altered the course of human survival and development.

Almost 80 years ago, Europe struggled to recover from a catastrophic war.

Millions of people crowded into wrecked buildings and dugouts – conditions that were ripe for outbreaks of infectious disease. Tuberculosis (TB) was particularly infectious and virulent in communities across the continent. Children were especially vulnerable, with thousands suffering debilitating fever, weight loss, chest pain, even death.

Until then, diseases like smallpox, measles and polio frequently ravaged large segments of the human population, claiming the lives of countless children in the process.

But this time was different. Equipped with vials of BCG, the vaccine that helps protect against TB, teams of medical workers fanned out across Europe to save lives. By 1950, some 11.4 million children had been vaccinated against the disease through the UNICEF-supported campaign. It marked the beginning of a new era in which the lives of millions of children would be protected from vaccine-preventable diseases.

Fast forward to 1980. The first-ever edition of *The State of the World's Children* report stated that “in the poorest countries only one child in ten will ever see a trained health worker or be immunized in its first year against diphtheria, tetanus, measles,

tuberculosis, pertussis or poliomyelitis – the six most common preventable diseases of childhood.” This finding was deeply troubling, but there were signs of hope and progress in immunization. That same year, smallpox was finally declared eradicated, demonstrating the remarkable power of vaccines to save lives.

That success helped inspire a global programme to protect more of the world's children against other life-threatening diseases – measles, diphtheria, pneumonia and more. By the end of the 1980s, about 7 in 10 of the world's children were protected by vaccines, and that number continued to climb, albeit more slowly, in subsequent decades. UNICEF played its part, and we still do. Today, we supply vaccines that reach 45 per cent of the world's children under 5 years of age.

In 2020, the COVID-19 virus continued to spread around the world – lives were lost and put on hold, schools closed, health systems were pushed to their limits and beyond. But in an extraordinarily short period of time, vaccines were developed, and mass vaccination campaigns began. Again, UNICEF was there. With our partners Gavi, the Vaccine Alliance, the World Health Organization (WHO) and the Coalition for Epidemic Preparedness Innovations (CEPI), we are part of the largest vaccine supply operation in history, providing almost two billion vaccine doses to 146 countries and territories. In addition, we have supported the development of technology that keeps vaccines cold as we move them to the most remote regions of the world, and we have worked hard to increase trust in the safety and efficacy of vaccines.



For almost 80 years, UNICEF has worked with international partners, national governments and many others to protect children against vaccine-preventable diseases. But, in a world slowly recovering from the COVID-19 pandemic, we know that the approaches we have taken in the past may not always be suited for current or future circumstances.

Despite decades of progress in childhood immunization, our collective efforts are falling short. Put simply, we are not meeting our goal to vaccinate every child. While new vaccines have been introduced that broaden protection against disease, none have managed to reach more than 9 out of 10 children. Many are not even coming close – only one in eight girls has received the human papillomavirus (HPV) vaccine, which protects against cervical cancer.

The pandemic has only darkened this picture. In the past three years, more than a decade of hard-earned gains in routine childhood immunization have been eroded. Getting back on track will be challenging. The shadow of the pandemic will hang over economies for years to come, forcing tough choices in spending and investment. Another challenge looms too: Confidence in vaccines seems to be waning in many countries. While vaccine confidence is far from being the most important determinant of vaccine demand in most communities, the apparent rise in hesitancy cannot be ignored.

Reaching our goal – to vaccinate every child – will require a real commitment by governments.

Some of this change will be technical – making better use of data, improving communication and outreach, and strengthening cold chains.

Some will require difficult conversations about financing and challenging trade-offs, including by national governments, donors and others, on how best to fund primary health care and immunization services and how to make them more resilient to future shocks.

And some will force societies and communities to examine their fundamental values. Children from marginalized communities are among the least likely to be vaccinated. Whether or not they are vaccinated is often a result of deep inequities – between rich and poor, between men and women, between communities at the centre of power and communities on the margins.

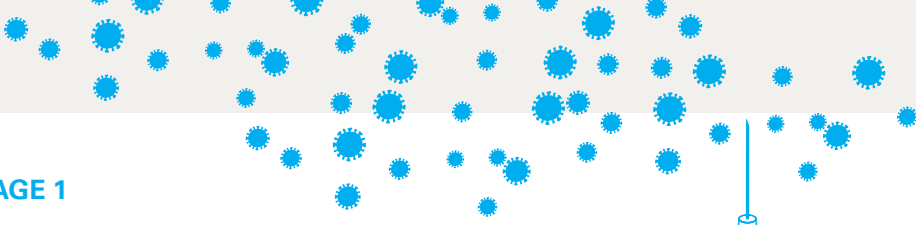
Achieving the change needed to vaccinate every child will not be easy. But the achievements of the past 80 years should give us hope. Time and again, the world has made remarkable progress in immunization, often in the most difficult and challenging circumstances.

Those achievements have transformed our world. They have allowed millions of children to survive and to live lives free of the lingering effects of illness. They have relieved families of the heartache and financial burden of caring for sick children. And they have added to the human capital, talent and energy of our societies.

In the years to come, we can achieve even more. New vaccines are already helping in the war against malaria. There will likely be more soon, including against chronic diseases such as cancer and Alzheimer's disease.

Our journey has been long but, in many ways, it is only just beginning.

## KEY MESSAGE 1

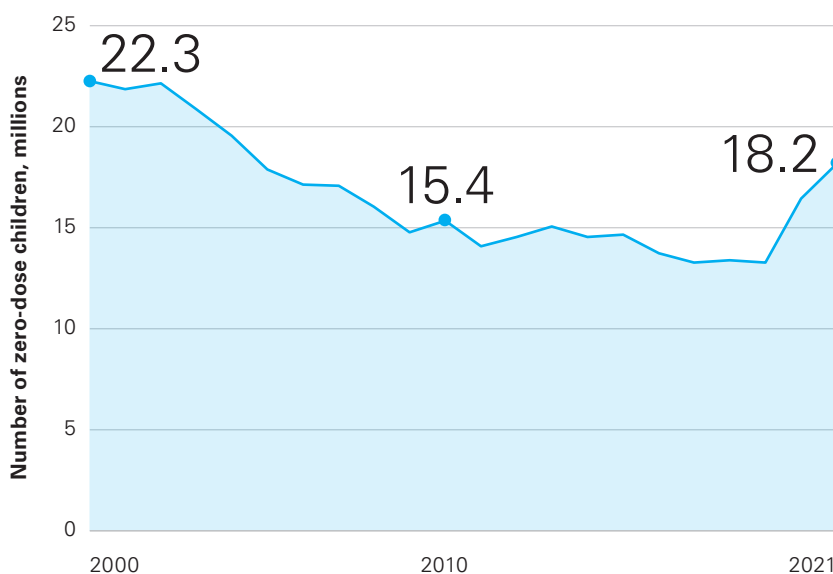


# Vaccines save lives

Vaccines save lives, but far too many children in the world are not being vaccinated. The COVID-19 pandemic only added to their numbers. The children who are missing out live in the poorest, most remote and most marginalized communities. To reach them, it is vital to prioritize investment in primary health care and in the health workers – mostly women – who deliver services. It is essential, too, to build confidence in vaccines and to make the most of a host of new ideas and technologies that can boost the power of vaccines and ensure they reach every child.

Over the past decade or so, despite growing efforts to expand immunization, there has been little progress in reducing the number of zero-dose children. Reaching every child remains a challenge.

Figure 1. Zero-dose children globally, 2000–2021



Source: World Health Organization and United Nations Children's Fund, 'Estimates of National Immunization Coverage (WUENIC), 2021 revision', July 2022.



1 in 5

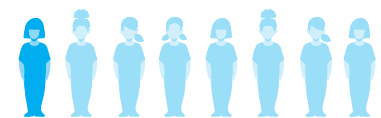
children are **zero-dose** (unvaccinated) and **under-vaccinated**, leaving them vulnerable to a range of vaccine-preventable diseases.



Around

1 in 5

children have no protection at all against measles, a childhood killer.



Around

7 in 8

eligible girls are not vaccinated against human papillomavirus (HPV), which can cause cervical cancer.



KEY MESSAGE 2



When we don't vaccinate children, we risk their lives and health – as well as our societies' growth and development

Vaccines save

4.4 million lives

every year, a figure that could rise to

5.8 million

by 2030 if the goals of the Immunization Agenda 2030 (IA2030) are met.



Before the introduction of a vaccine in 1963, measles killed an estimated 2.6 million people globally every year, mostly children. By 2021, that had fallen to 128,000 – still too high, but a remarkable improvement.

Vaccines help children thrive, support families and caregivers, and benefit the health of the wider community



Being immunized protects children against illness. That helps prevent absences from school, which improves **learning outcomes**.



When children are protected against illness, parents and caregivers – mostly mothers – need to take less **time off work** to care for sick children.



Families are also less likely to face the emotional pain and sometimes **catastrophic costs** of caring for a sick child.



Vaccinating children supports the health of the wider community by promoting **herd immunity** and helping to limit the spread of antimicrobial resistance.

Vaccines deliver an unrivalled return on investment



US\$26

Every dollar spent on vaccination delivers a return on investment of US\$26.

### KEY MESSAGE 3



## The COVID-19 pandemic set back childhood immunization around the world

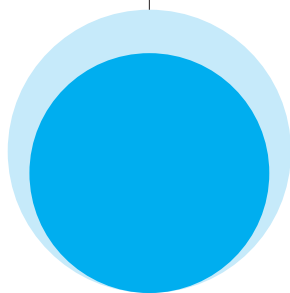
UNICEF estimates that

# 67 million children

missed out entirely or partially on routine immunization between 2019 and 2021;

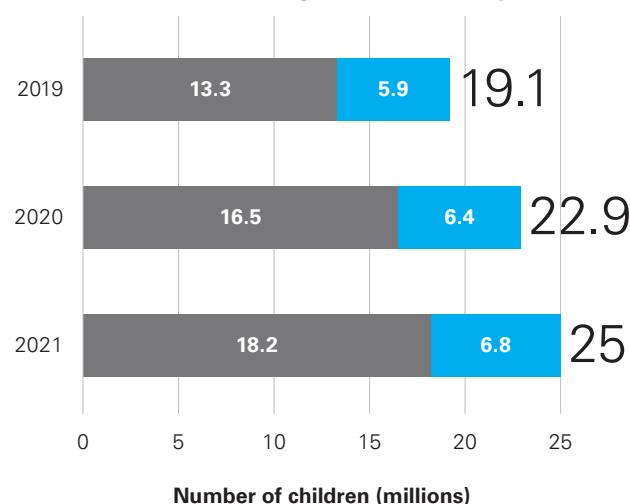
# 48 million

of them missed out entirely.



Disruptions caused by the pandemic interrupted childhood vaccination almost everywhere, setting back vaccination rates to levels not seen since 2008.

**Figure 2. The number\* of children who missed vaccination rose during the COVID-19 pandemic**



**Vaccination status** ■ Zero-dose ■ Under-vaccinated

**Source:** World Health Organization and United Nations Children's Fund, 'Estimates of National Immunization Coverage (WUENIC), 2021 revision', July 2022. \*Numbers are rounded.

### Why did the pandemic set back childhood immunization?



It placed huge new demands on **health systems**, which they were often ill-equipped to cope with.



It exacerbated existing **shortages** of health workers.



It placed **heavy strains** on front-line health workers, mostly women, who were also coping with additional care burdens at home.



**Stay-at-home** recommendations and the fear of contracting the virus from health-care facilities led families to put off vaccinating children.

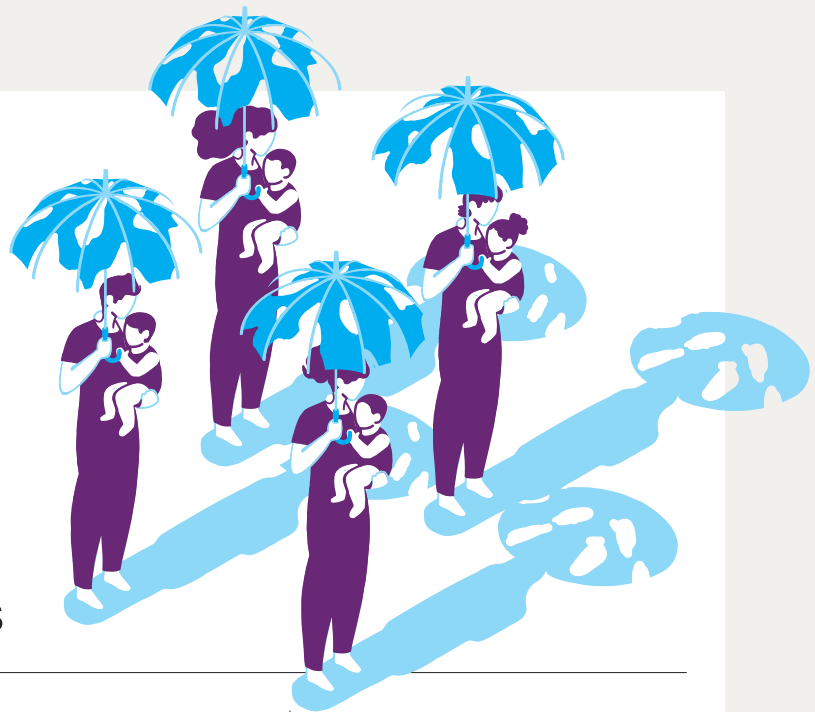
### What can be done?

**Catch-up and recovery:** Children born just before or during the pandemic are now moving past the age when they would normally be vaccinated. Urgent action is now needed to catch up on those who missed out on vaccination and to support the recovery of immunization services set back during the pandemic.



## KEY MESSAGE 4

But even before the pandemic, far too many children missed out on vaccination; many live in the poorest and most marginalized communities



The story of the children who are not being vaccinated is a story of inequity, poverty, underserved communities and unempowered women

### Poverty



In the poorest households, just over 1 in 5 children are zero-dose; in the wealthiest, it is just 1 in 20.

In some regions, the gap is even greater: In West and Central Africa, almost 1 in 2 children in the poorest households are zero-dose, compared with around 1 in 16 in the wealthiest.

### Unempowered women

Children of mothers with no or little education are much less likely to be vaccinated

Mothers with:	Proportion of zero-dose children
No education	23.5%
Primary school education	13.1%
At least secondary school education	6.9%

**Source:** Victora, Cesar, and Aluísio Barros, 'Within-Country Inequalities in Zero-Dose Prevalence: Background paper for *The State of the World's Children 2022*', International Center for Equity in Health, Federal University of Pelotas, Brazil, December 2022.

Underserved communities face challenges of availability, access and affordability



### Availability

Are vaccines delivered to health centres or outreach campaigns and are health workers there to administer them?



### Accessibility

Are vaccines and services located in a place and offered at a time where and when children and families can get to them?



### Affordability

Can families afford health service, pay for bus fares or skip a day's work to get to the health centre?

### Underserved communities



Many zero-dose and under-vaccinated children live in challenging settings, such as remote rural communities, built-up urban settlements, and areas experiencing conflict and crises.



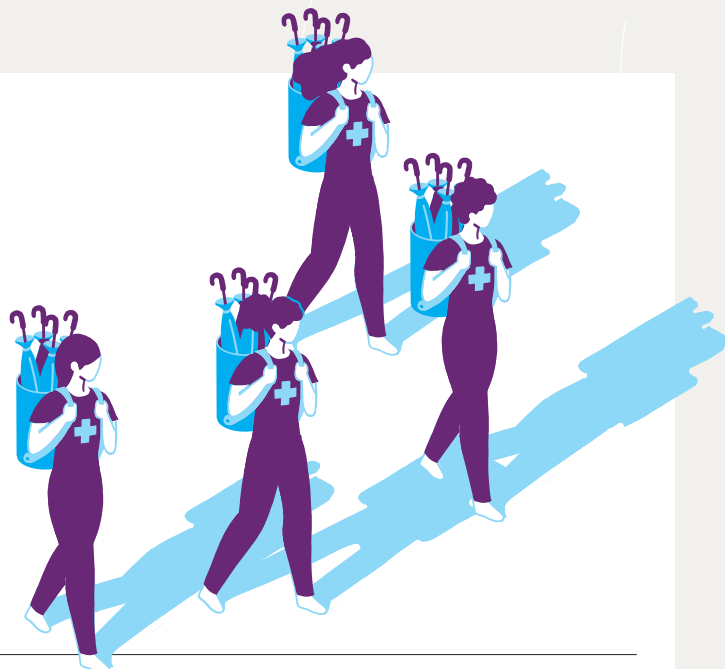
These challenges are greatest in low- and middle-income countries, where about 1 in 10 children in urban areas are zero-dose; the figure is just under 1 in 6 in rural areas. In upper-middle-income countries, there is almost no gap in between urban and rural children.



2 in 5 of the children in the world who had not been immunized lived in conflict-affected or fragile settings (in 2018).

## KEY MESSAGE 5

To vaccinate every child, it is vital to strengthen primary health care and provide its mostly female front-line workers with the resources and support they need



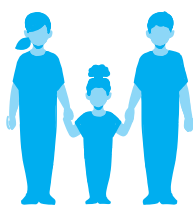
- Many children miss out on vaccination because they live in places where there is no or limited primary health care – a health-care approach that includes health promotion, disease prevention and treatment.
- Vaccine campaigns play a powerful role in reaching many of these children, and they will continue to do so. But campaigns are, by definition, short-lived, and they have inherent limitations because they do not necessarily offer continuous and predictable services.
- Integrating childhood immunization into strengthened primary health is essential to sustainably reach the goal of vaccinating every child.



### Support health workers

As health workers and community health workers, women are at the front line of delivering vaccinations, but they face low pay, informal employment, lack of career opportunities and threats to their security. Far too few are in leadership positions. Responses need to include:

- Offering full-time jobs with good and regular pay and decent working conditions
- Providing career development and training opportunities, including in the integrated management of childhood illness
- Recognizing and regularizing the role of community health workers.



### Integrate services

As a well-established point of contact with families, vaccination services can be an entry-point for providing additional essential health services. Equally, strong primary health-care systems can contribute to vaccination efforts, providing platforms to reach those left behind.



### Engage with communities

Vaccination interventions designed, delivered and evaluated by members of the communities they serve can increase equity and efficacy.



### Prioritize financing immunization

Even in a time of tight budgets, the high returns on investment from immunization underscore the benefits of prioritizing funding.



## KEY MESSAGE 6

Parents and communities need to believe in the value of vaccination; there are worrying signs that confidence in vaccines is slipping in some countries



### To bolster vaccine confidence, strong efforts are needed to:



#### Engage with communities and promote dialogue

Engagement can also stem the influence of rumour and misinformation and bolster widespread support for immunization. Dialogue can help foster trust, opening the door for people to share their feelings and concerns about vaccination.



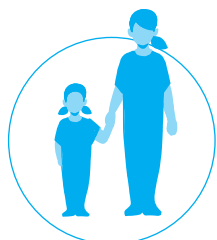
#### Support health-care providers to make an impact

Health-care providers are a trusted voice on vaccines. Motivating and equipping immunization providers – and the community health workers supporting them – to have impactful conversations about vaccination is essential.



#### Carry out social listening

Social listening – investing in understanding people's attitudes to vaccines in real time – is vital. Approaches can include carrying out regular surveys and monitoring debates and discussions on social media.



#### Empower women and girls

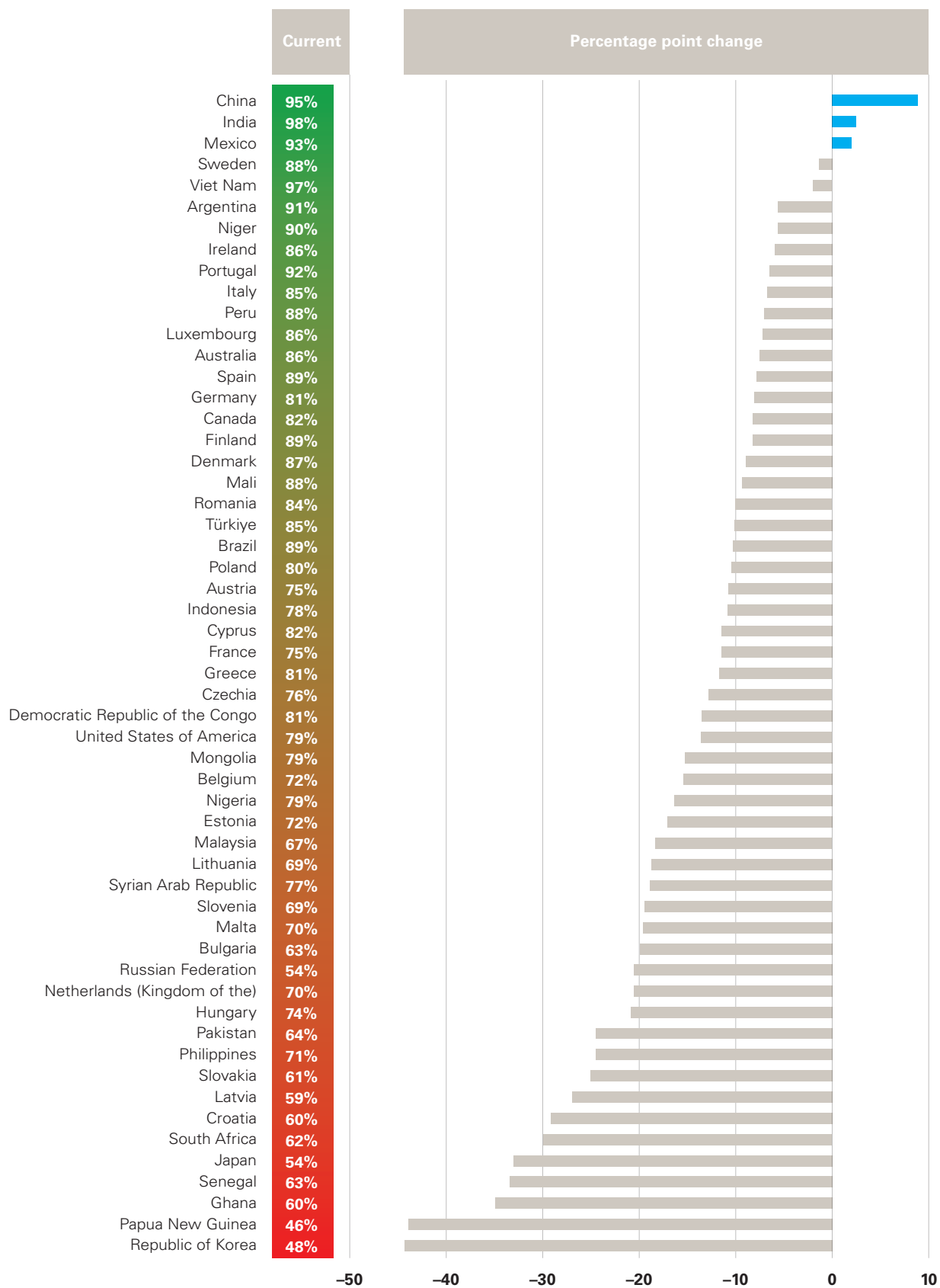
Understanding how gender impacts vaccine uptake can help with the design of more effective programmes, as well as education and information campaigns.

### Trends in vaccine confidence

- Data collected before and during the COVID-19 pandemic indicate **declines in the perception of the importance** of vaccines for children in many (but not all) countries for which data are available (see Figure 3).
- Confidence levels appear to have declined more in **younger** than in older age groups.
- Vaccine confidence is notoriously **volatile**, and any trends are time and location specific. But any signs of broader loss of confidence need to be taken seriously.



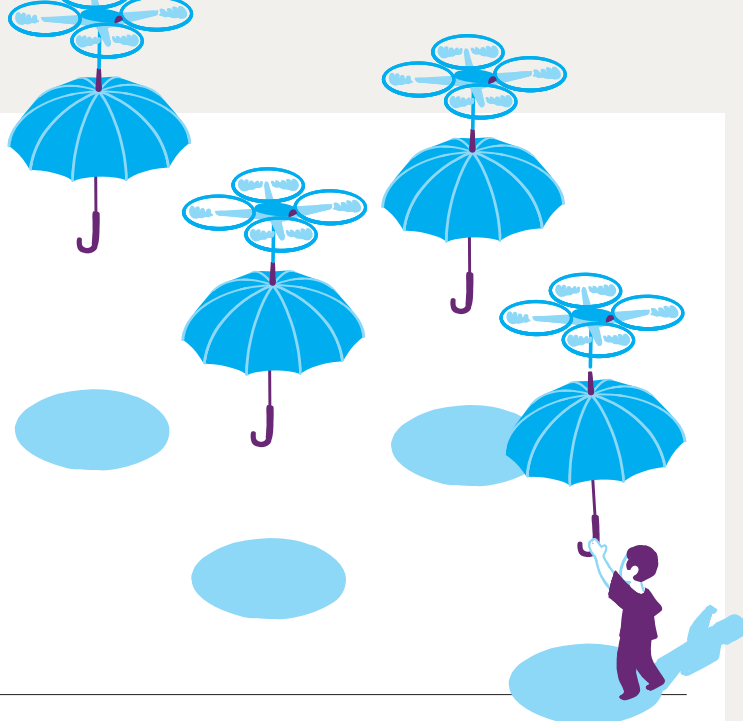
**Figure 3. Confidence that vaccines are important for children dropped after the start of the pandemic**  
 Percentage of population that currently (most recent year) perceive vaccines as important for children and percentage-point change before and after the start of the pandemic



Source: UNICEF analysis based on data from The Vaccine Confidence Project, London School of Hygiene & Tropical Medicine, 2022.

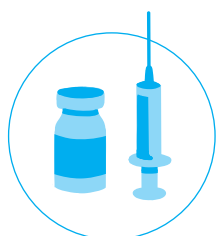
## KEY MESSAGE 7

Vaccinating every child means investing in new approaches to strengthen financing and make the most of scientific and technological innovations



### **Overcoming fiscal constraints in low- and middle-income countries is essential to remove significant obstacles to providing vaccination services**

- Overall, governments are the largest contributors to immunization, but donors provide other essential funds.
- The amount governments allocate is not always the same as what is actually spent. Problems can include revenue projections falling short, shifting of funds to meet other needs, delays in procurement, and coordination issues.
- Further strengthening of health and finance systems is essential to ensure funds are spent efficiently.



### **The COVID-19 pandemic helped change the landscape for vaccine development**

- The speed with which vaccines were developed and produced during the pandemic offers important lessons for faster vaccine development and approval.
- Several new vaccines are emerging – and one has already been approved – to protect children against malaria, which kills nearly half a million children each year.
- Innovations in producing a new pneumococcal conjugate vaccine (PCV), which helps protect children from pneumonia, look set to cut the cost of the vaccine and improve supplies.



### **Innovations in vaccine supply chains will help improve access to vaccines in remote areas**

- Small temperature-sensitive indicators on vaccine vials allow health workers to monitor vaccines for heat exposure.
- Drones are being successfully used to deliver health commodities in some African countries.



### **Digital technologies are helping to improve the quality and timeliness of data**

- Electronic immunization registries can ensure the right child receives the right vaccination at the right time.
- Mapping systems using ‘big data’ from vaccinators’ phones can help ensure communities in need are being identified.
- Sending text-message reminders to parents can help raise vaccination rates.





In Nigeria, Victoria Aina became worried about her granddaughter Toluwalase when she no longer ate her favourite foods. A neighbour spotted Toluwalase in the street and recognized that the little girl had measles. Treatment followed, and Toluwalase recovered.

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UN0671473/Nelson Apochi



# For Every Child, Vaccination

On a mat in a tenement in Lagos, a little girl is sleeping. Her forehead and arms are covered with fading scars. A few months earlier, the girl fell ill with a high fever and developed a skin rash. Her grandmother, Victoria Aina, who cares for her, was concerned.

"I became worried when she stopped eating her favourite meals," she said. "Toluwalase loves bread and beverage. I was alarmed when she shunned them."

Someone in the neighbourhood spotted Toluwalase in the street and diagnosed her illness: measles. Treatment followed, and the girl recovered.

Toluwalase was lucky. Many other children are not. Measles is a killer. Often dismissed as just one of those things that children get – a rash and a fever that clears in a few days – measles claims around 351 lives every day, mostly children. Children who catch the highly contagious disease are at risk of pneumonia and of longer-term consequences such as brain damage, deafness and blindness.

Since the introduction of a vaccine in 1963, infections and deaths from measles have been preventable.

That vaccine has helped to transform childhood. Before its introduction, measles claimed around 2.6 million lives every year and was the leading cause of childhood

blindness in low-income countries. Over the past two decades, immunization against measles is estimated to have saved more than 31 million lives.

But far too many children are still not getting the protection they need against measles and a raft of other serious diseases.

For the little girl's grandmother, the lesson is simple: "Children should be vaccinated."

## The children left behind

Toluwalase is not alone.

In remote rural villages, in city slums, in conflict and fragile settings, and in many other places around the world, far too many children are not getting the vaccines they need to protect them against serious disease. In 2021, just over 25 million children were estimated to be either unvaccinated – **zero-dose** – or under-vaccinated (*see Box 1*). Like Toluwalase, many of these children come from the poorest families and communities. Their lives are often marked by multiple deprivations, with limited access to basic services, such as clean water, education and – crucially – primary health care.

Just as it did with so many other aspects of life, the COVID-19 pandemic severely disrupted childhood immunization. Between 2019 and 2021, UNICEF estimates that **67 million children** missed out entirely or partially on routine immunization; **48 million of them missed out entirely**. In percentage terms, the share of vaccinated children fell 5 percentage points to 81 per cent. In other words, **around one in five children worldwide were *not* fully protected against vaccine-preventable diseases**. Worryingly, the backsliding during the pandemic came at the end of a decade when, in broad terms, growth in childhood immunization had stagnated (*see Figure 1*).

For the sake of children like Toluwalase, and children everywhere, we must do better.

## We can do better

Immunization is one of humanity's most remarkable success stories. It has saved countless lives. Many more lives will be saved if the ambitious – but realizable – goals of the *Immunization Agenda 2030* (IA2030) are achieved. This global strategy for increasing vaccination coverage aims for a world where "everyone, everywhere, at every age, fully benefits from vaccines for good health and well-being" (*see Box 2*).

By helping to protect against some of humanity's greatest scourges, immunization allows children everywhere to live lives free of many forms of disability. Immunization has led to the eradication of smallpox, a disfiguring and often fatal disease that in the twentieth century alone claimed an estimated 300 million lives. There has been remarkable progress, too, on the long road to eradicating polio: Today, most of us live in countries that are free of a disease that once robbed so many people of the ability to walk.

### Box 1

## Understanding zero-dose

'Zero-dose' and 'under-vaccinated' have become key concepts in explaining immunization coverage, in aligning global efforts to improve vaccine coverage, and for monitoring success. What do they mean?

**Zero-dose** refers to children who have not received any vaccinations. Most live in communities that experience multiple deprivations.

**Under-vaccinated** refers to children who have received some, but not all, of their recommended schedule of vaccinations.

To calculate the numbers of zero-dose and under-vaccinated children, a proxy measure is used. Children who have not received the first dose of the diphtheria, tetanus and pertussis (DTP1) vaccine are described as zero-dose. Children who have received DTP1 but not the third dose (DTP3) are described as under-vaccinated.

Children typically receive these vaccines in the first year of life. In general terms, therefore, where data for zero-dose and under-vaccinated children are presented in percentage terms, these numbers represent percentages of surviving infants (rather than the entire child population).

The power of immunization was demonstrated again in the COVID-19 pandemic. The disease claimed 14.9 million lives – directly and indirectly – in 2020 and 2021, according to the World Health Organization (WHO), and disrupted many more lives around the world, especially children's. The development of vaccines against COVID-19, many using innovative technologies, has essentially allowed life to return to normal in much of the world. While it has taken far too long to get those vaccines to people living in the poorest countries, the global impact is still astounding: Already, at least two thirds of the world's population has been immunized against COVID-19. Those vaccines have prevented an estimated 20 million deaths globally.

The achievements of mass immunization and the development of the COVID-19 vaccines are all the more remarkable considering how quickly they happened. Following the identification of the COVID-19 virus in December 2019, it took only a year for the first vaccine against COVID-19 to be authorized. Within another year, it is estimated that more than half of the global population had received at least one dose of a COVID-19 vaccine.

These examples demonstrate that public demand, scientific innovations and – perhaps above all – political will can drive rapid change.

## *We must do more, and we must do better, now*

That change is needed, and it is needed now.

The backsliding in immunization during the pandemic should sound an alarm bell. As the 67 million children who missed out on vaccines over the past three years pass the age when they would routinely be immunized, it will require a dedicated effort to ensure that they catch up with their vaccinations.

The backsliding is worrying not just in itself, but also for what it represents.

It highlighted the reality that the story of zero-dose and under-immunized children is overwhelmingly a story of inequities. In Angola, Nigeria and Papua New Guinea, a child from the wealthiest group in society is at least five times more likely to be vaccinated than one from the poorest group. The children who are not vaccinated are also often the children of mothers who have not been able to go to school and who are given little say in family and spending decisions.

The pandemic also exposed – and exacerbated – persistent weaknesses in health systems and primary health care, which are key to ensuring children are vaccinated. Key resources were diverted to respond to the pandemic, which, along with many other factors, contributed to the backslide in routine immunization. But even before the pandemic, far too many primary health care systems suffered from a lack of skilled health workers, limited access to essential supplies and equipment, weak capacity for collecting and using data and conducting disease surveillance, and shortages of key medicines and vaccines at the local level. These systems also faced barriers to using available resources efficiently and effectively.



The pandemic highlighted the difficulties facing women working in health care and immunization programmes. Although they form the bulk of the health workforce, they have long been underrepresented in leadership roles, denied opportunities for training and professional advancement, and have faced the risk of violence and gender-based violence in doing their jobs. The pandemic only exacerbated these challenges. Many women health workers faced the additional burden of balancing an increased workload with extra family responsibilities, such as looking after children locked out from school.

If primary health care is to become more resilient, the needs and potential of women health workers must be better recognized. They need more opportunities for full-time – rather than short-term and ad hoc – employment and for training and professional development. They also need to be better represented in leadership roles, so that decisions at the top of health systems better reflect the realities faced by the people who account for the vast majority of health workers on the ground.

The pandemic also brought fresh attention to vaccine hesitancy. A multifaceted challenge, vaccine hesitancy – or the state of being undecided or uncertain about vaccination – is only one of many barriers to families seeking out vaccines for children. But it is a challenge that new data presented in this report show needs greater attention. The data, from the Vaccine Confidence Project, show confidence in the importance of vaccines for children was lower after the emergence of the pandemic than before in most countries for which data are



**Volunteer health worker, Mahainue Marma (right) provides routine vaccination services in Thanchi, a remote rural area in Bangladesh. Bringing vaccines to communities can help reach zero-dose children.**

© UNICEF/U.S. CDC/  
UN0723022/Fabeha Monir



available. The declines were generally greater among younger people than older people. Even before the pandemic, vaccine hesitancy was identified as one of the top ten threats to global health. The influence of a number of factors, including growing access to misleading information on social media, declining trust in authority in some parts of the world, and political polarization, suggest this threat may only be growing.

## The consequences of failure

Failure to protect children against disease has serious consequences. Put bluntly, children die, and many more suffer lifelong disabilities. Unfortunately, the world continues to see far too many outbreaks of vaccine-preventable diseases. In 2022, for example, the number of measles outbreaks was double the total in the previous year. Meanwhile, the discovery of poliovirus in Israel, the United Kingdom of Great Britain and Northern Ireland, and the United States of America in 2022 was a reminder that even remarkable progress against a disease like polio can be put at risk if we fail to vaccinate every child.

In other words, **no one is safe until everyone is safe.**

The consequences of failing to vaccinate children may become more severe in years to come. Climate change risks exposing new communities to infectious diseases such as malaria, dengue and cholera, and may alter seasonal disease patterns. Increasing risk of overlapping climate crises, including droughts, heatwaves and floods, will put further strain on children's access to essential services, including clean water and primary health care. Also of long-term concern is the rise of drug-resistant infections.

Failure to immunize children undermines their right to what the Convention on the Rights of the Child describes as "the enjoyment of the highest attainable standard of health and to facilities for the treatment of illness and rehabilitation of health."

And it sets back still further the prospects of attaining the Sustainable Development Goals (SDGs). Immunization is key to achieving SDG 3, which aims to "ensure healthy lives and promote well-being for all at all ages." But it is also linked to 13 of the other SDGs. For example, by supporting children's cognitive development and education attainment, it can drive progress on SDG 4 – delivering quality education. In that sense, immunization is at the heart of our collective commitment to achieve a better and more sustainable future for us all.

## A time for political will

Much will have to happen if we are to protect every child against vaccine-preventable disease. The needs are complex, even daunting. They will become even more so if vaccines are to reach children in those places that are often overlooked – the remote village miles from the nearest road, the urban slum where newly arrived families live in anonymity, the warzone where families do not know where they will be sleeping tomorrow night.

### Box 2 Immunization Agenda 2030

The *Immunization Agenda 2030* (IA2030) is the international community's vision and strategy to ensure that immunization leaves no one behind over the next decade. This ambitious global strategy aims to halve the number of children who miss out on essential vaccines and to achieve 90 per cent coverage for key life-saving vaccines. Overall, if the agenda is met, it will save an estimated 50 million lives in this decade.

The strategy also targets a major increase in the introduction of new vaccines in individual countries. Between 2010 and 2017, some 116 low- and middle-income countries introduced at least one new vaccine. Worryingly, however, none of the newer vaccine introductions, such as the second dose of measles vaccine and the vaccine against rotavirus (a virus that can cause diarrhoea and vomiting in children and lead to death), have achieved global coverage above 90 per cent. The pandemic set progress back still further, with marked slowdowns in vaccine introductions in 2020 (other than COVID-19 vaccines), followed by only a slight pick-up in 2021. The IA2030 sets a target of 500 introductions of new or under-used vaccines.

Strengthening the role of health systems in immunization is a key pillar of IA2030. The global strategy also emphasizes the role of immunization as a key part of people-centred primary health care services. And it places countries at the centre of the strategy, emphasizing the core role of national governments in ensuring citizens are immunized.

But overriding them all is one single necessity: political will. Nothing will happen unless we garner the political will – globally, nationally and locally – to protect children against vaccine-preventable diseases.

That will should be grounded in optimism. The emergence of mass immunization in the 1980s and the development of COVID-19 vaccines show we can make progress, and we can make progress quickly. Encouragingly, and despite the setbacks it caused to childhood immunization, the pandemic may also have helped lay the groundwork in some countries for faster progress. For example, investment in cold chains to distribute COVID-19 vaccines, the emergence of innovative approaches to vaccine development and delivery, and the use of advanced data-collection techniques to keep track of vaccine doses and vaccinations – all have the potential to support childhood immunization in the years to come.

Political will should also be grounded in the realization that immunizing children makes economic sense. At an average cost of about US\$58 per child in low- and middle-income countries, the standard course of vaccines can contribute enormously to protecting against disease and lifelong disability. But it does much more than that. For example, it can help to protect families' livelihoods: Families, especially the poorest, can face catastrophic costs if parents have to take time off work to care for a sick child or pay for health care. Longer term, protecting children against disease can result in huge savings in spending on health care, and can support societies and economies in developing human capital and productivity. Despite shrinking national budgets in some countries, immunization must remain a priority because it is a proven strategy for reducing future health-care costs and it supports economic growth. Continued and sustainable investment in immunization as part of health budgets is essential. But governments and donors need to work together to improve the efficiency and effectiveness of planning, budgeting and service delivery.

Now is a time for determination.

Now is a time for political will.

Now is the time to protect the health of *every* child.





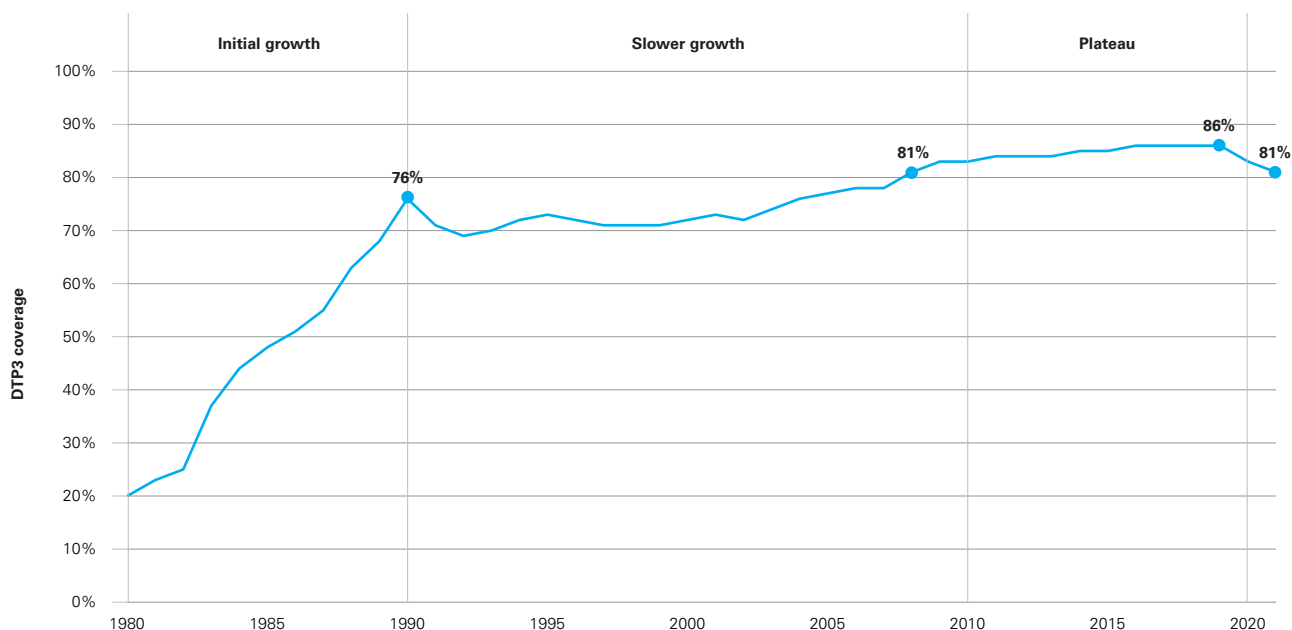
Satha sits on the lap of her mother, Pum Sony, as she is vaccinated against measles and rubella in Cambodia.  
UNICEF/UN0673059/Raab



# Zero-dose and under-vaccinated children: The numbers

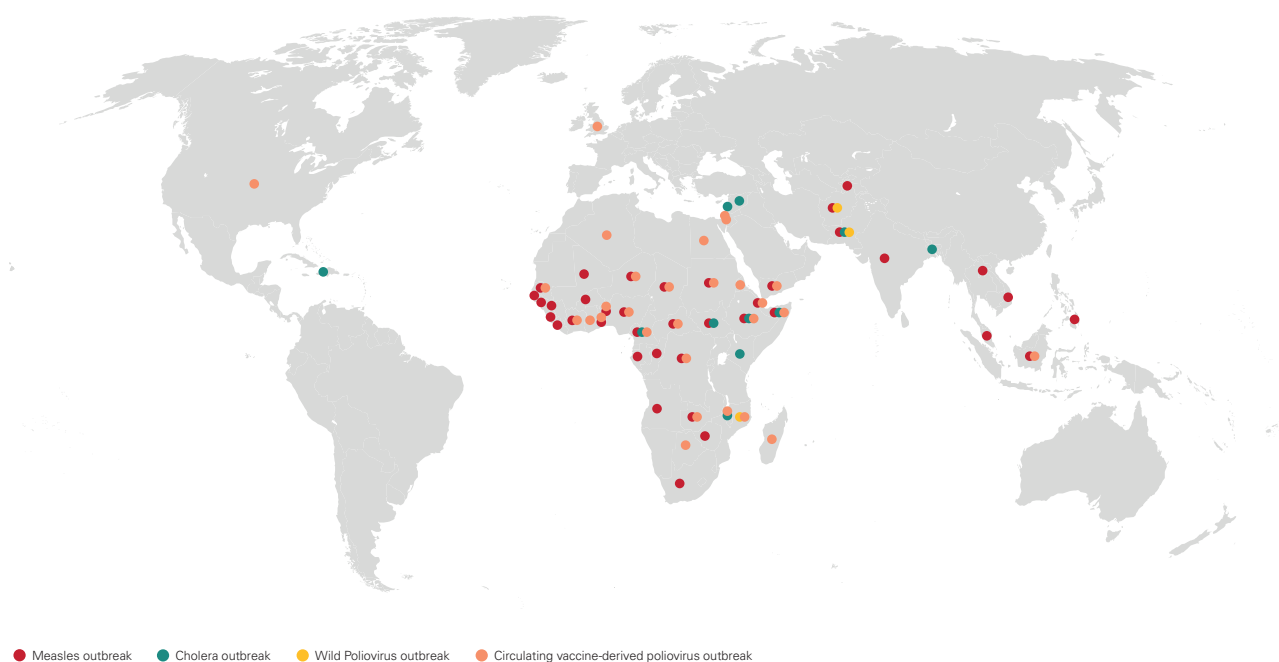
**Figure 4. Backsliding in vaccination coverage during the pandemic came at the end of a decade that saw little growth**

Percentages of under-vaccinated children, 1980–2021



**Source:** World Health Organization and United Nations Children’s Fund, ‘Estimates of National Immunization Coverage (WUENIC), 2021 revision’, July 2022.

**Figure 5. Countries around the world experienced outbreaks of vaccine-preventable diseases**



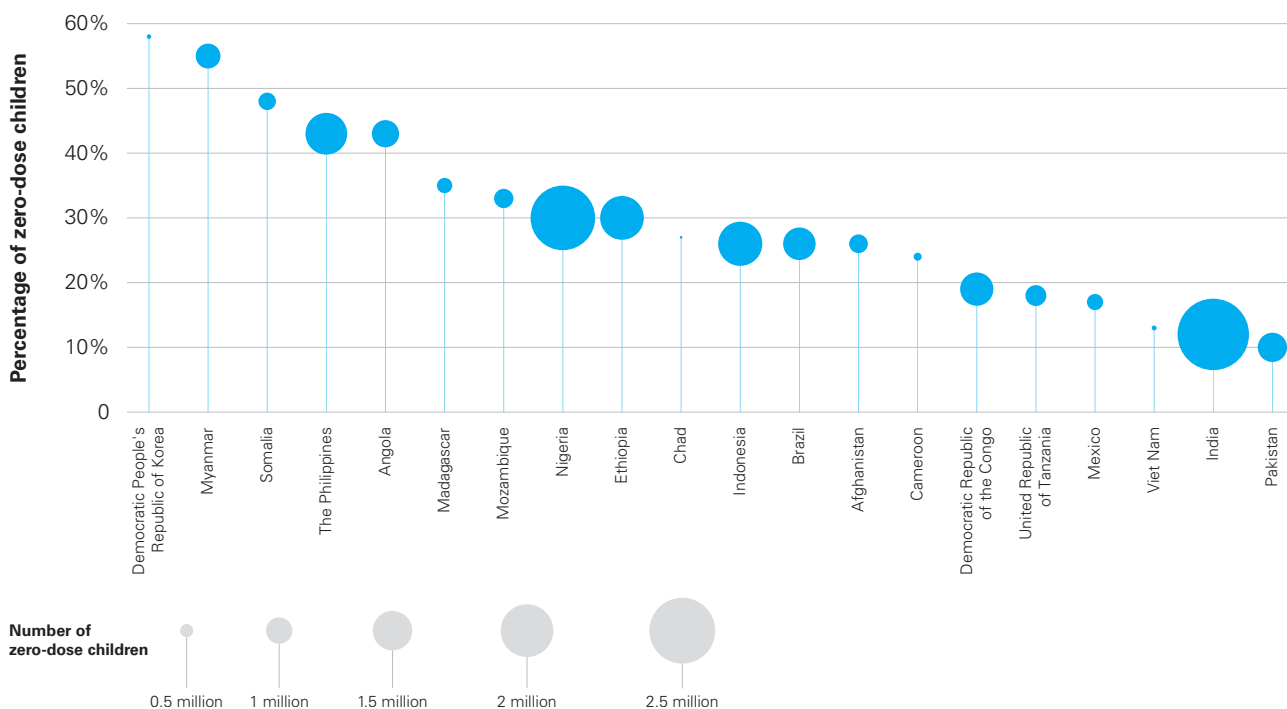
**Source:** UNICEF analysis based on data from the World Health Organization (WHO) ‘Global Wild and Vaccined-Derived Polio Update, January 2023’; WHO ‘Measles and Rubella Global Update, January 2023’; International Coordinating Group (ICG) on Vaccine Provision/Cholera Vaccine Dashboard, accessed 13 February 2023.

**Note:** In Afghanistan and Pakistan, polio is endemic.

**Note:** This map does not reflect a position by UNICEF on the legal status of any country or territory or the delimitation of any frontiers.



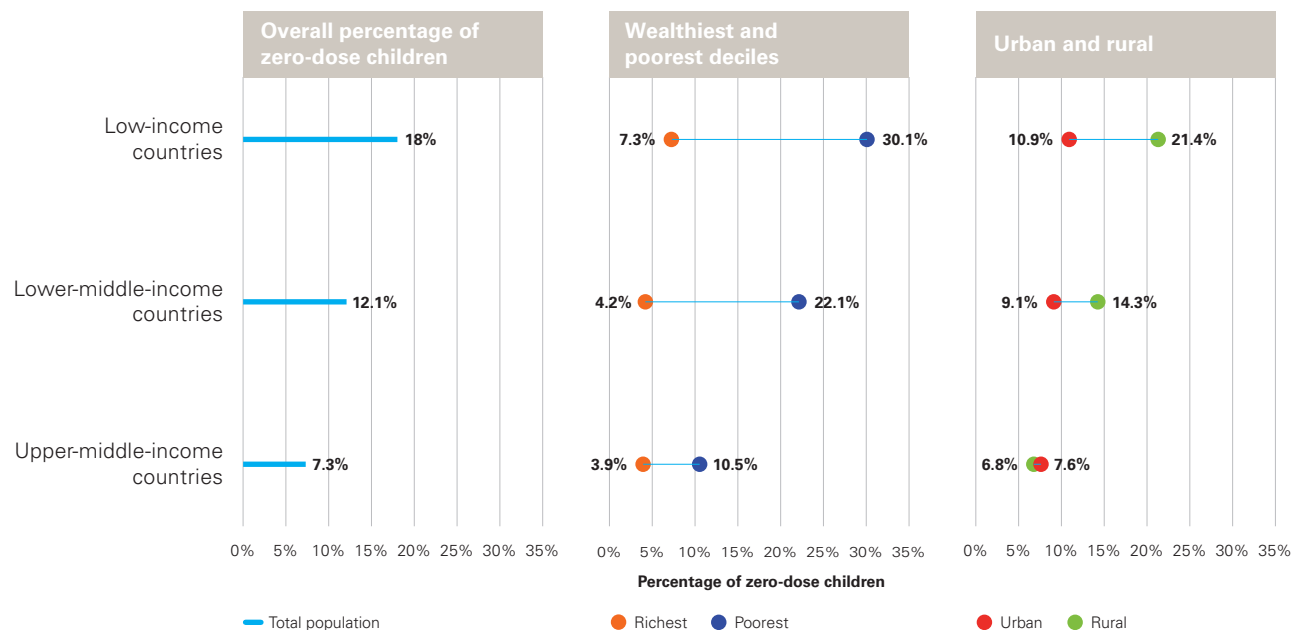
**Figure 6. Top 20 countries with the largest numbers of zero-dose children**  
Zero-dose children by number and percentage of the country's child population, 2021



**Source:** World Health Organization and United Nations Children's Fund, 'Estimates of National Immunization Coverage (WUENIC), 2021 revision', July 2022.  
**Note:** The size of the bubble represents the number of zero-dose children in a country; placement on the vertical axis represents the percentage of zero-dose children in a country.

**Figure 7. Vast inequities exist for children in poor communities and countries**

In 74 low- and middle-income countries, percentage of zero-dose children, percentage in highest and lowest wealth decile, percentage in urban and rural locations, organized by World Bank income classification



**Source:** Victora, Cesar and Aluísio Barros, 'Within-country Inequalities in Zero-dose Prevalence: Background paper for The State of the World's Children 2023', International Center for Equity in Health at the Federal University of Pelotas, Brazil, December 2022.

In countries around the world, governments, donors and partners are working with communities on solutions: They are reaching out to immunize the most marginalized children and provide essential primary health care services.



### 1 NICARAGUA

**Reynilda Cramer**, part of a team of community nurses from the Miskito community who visit children in their homes.

"Children are given routine vaccines according to their schedule, their height and weight. Furthermore, heights are taken, deworming and vitamins are administered if appropriate. If anyone else in the family has health problems, we also take care of that other person."



### 3 HAITI

**Mona Yvrose Jean Claude**, a nurse at Sacré Coeur Health Centre for more than 10 years.

"To improve immunization in our health centre, it would be helpful to renew our multi-skilled community health workers and have the possibility of creating assembly stations and carry out mobile clinics."

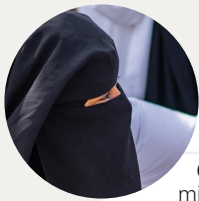


### 2 ECUADOR

**Maria Catucuago**, part of a corps of indigenous volunteers who keep watch over the health and well-being of children under the age of 5.

"I feel passionate about helping others. For many years, I have been involved in community activities that promote the well-being and health of families."





#### 4 YEMEN

**Ghada Ali Obaid**, midwife and vaccinator, who has witnessed needless suffering when children are not vaccinated.

“The essence of our work is saving peoples’ lives and reducing the suffering of women and children. Personally, this is the most significant indicator of success in my work and life.”



#### 5 UZBEKISTAN

**Umida Djuraeva**, a nurse who administers the HPV vaccine at the Central Multidisciplinary Polyclinic of Kibray.

“Nowadays, people come voluntarily. They have realized the vaccine is safe and tolerated well.”



#### 6 KYRGYZSTAN

**Mirlan Dezhysubekov**, an imam who works with the Kaiyrma village community health committee.

“From a religious point of view, we cannot judge parents’ decisions to vaccinate or not to vaccinate their children. But I tell families that I was vaccinated, as well as my children, and we have all been well.”



#### 7 CAMBODIA

**Pyun Kunthea**, a government health worker who immunizes children in a remote community.

“Just 20 years ago, preventable diseases were still common... Things got better, but it was still difficult to reach villages like this, which were distant from health centres. Also, people lacked confidence in vaccines because they weren’t always given information in their own language. That’s changed.”



#### 9 INDIA

**Dematso Khamblai**, a health worker who is part of the Alternative Delivery System, which brings vaccines to remote areas by foot.

“It becomes dangerous during the monsoon season as rains make the trek slippery. There are also frequent landslides during the monsoon season, which make the trek tough.”



#### 10 SOMALIA

**Maimuna Hussein**, a nurse and head of the Jilab Health Centre, part of the Jilab camp for internally displaced persons.

“[Antenatal care] is very, very important. It is the entry-point when the mothers get a private consultation. That is why you need to give them more time.”



#### 8 INDONESIA

**Irwan Hakim**, a community clinic nurse who works on routine immunization outreach in a remote island community.

“Fathers are the decision makers of the household here... I’m lucky. I’m from a neighbouring island and I can speak local dialect so it’s easier to communicate with them.”

Most often, the goals are realized by health workers, especially women.

# Recommendations

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Despite undeniable progress over many decades, we continue to face critical challenges in immunization. Immunization coverage has fallen back, or stagnated, in too many places. We are persistently missing about one in five children with life-saving vaccines, especially the socially marginalized and poorest children, and the situation has only deteriorated during the COVID-19 pandemic.

The decline in immunization throughout the pandemic should sound an alarm bell: Routine immunization must be a priority in the coming years. We must take concerted action to catch up on children who missed out on being vaccinated during the pandemic, rebuild systems, and tackle major gaps in health systems. Failure to act will devastate the lives of today's children and adolescents and tomorrow's adults, and will set back progress towards reaching the Sustainable Development Goals.

The pandemic has shown the centrality of collective and concerted action to ensure that vaccines reach everyone. We are constantly reminded that "vaccines don't save lives, vaccination saves lives." For vaccination to happen, political will must be a number one priority across countries.

## 1. Vaccinate every child, everywhere

Equity means this: Vaccines must reach every child, no matter where they were born, who they are or where they are living. This means that we must:

- ✓ Catch up on the vaccination of children missed during the pandemic
- ✓ Identify zero-dose and under-vaccinated children and address key inequities
- ✓ Identify children in urban areas; access children in rural areas
- ✓ Meet the challenges in emergency and fragile settings.

## 2. Strengthen demand for, and confidence in, vaccination

Many factors affect families' readiness to vaccinate children, and they vary considerably depending on local contexts, culture and societal norms. Understanding the issues and responding means we must:

- ✓ Talk to communities
- ✓ Tackle gender barriers
- ✓ Equip health workers to address concerns
- ✓ Rethink accountability in health systems to boost trust.



### 3. Spend more and spend better on immunization and health

The COVID-19 pandemic showed that, despite significant global investment in immunization and health-systems-strengthening over the last decade, health systems in many countries remain fragile. To improve immunization coverage and primary health care, governments and partners need to come together to:

- ✓ Invest in primary health care at the national level
- ✓ Better align donor support with national priorities and contexts
- ✓ Strengthen leadership capacity and promote accountability
- ✓ Explore innovative financing.

### 4. Build resilient systems and shock-proof them for the future

Resilient systems can respond to outbreaks, epidemics or pandemics, while continuing to provide essential services. Building these systems also means we must:

- ✓ Focus on health workers, especially women
- ✓ Improve data collection and disease surveillance
- ✓ Secure vaccine and other supplies
- ✓ Develop and promote worthwhile innovations.

The world is facing a red alert for children's health: Vaccination coverage dropped sharply during the COVID-19 pandemic, leaving millions more children unprotected against some of childhood's most serious diseases. In addition, many millions of children from some of the world's most marginalized communities have long missed out on life-saving vaccination. Catch-up and recovery are needed urgently to vaccinate the children missed and to avoid further backsliding. And greater effort is needed to reach the children historically left behind. *The State of the World's Children 2023* examines what needs to happen to ensure that every child, everywhere is protected against vaccine-preventable diseases.



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