



Save the Children



NOT IMMUNE: CHILDREN IN CONFLICT

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**Australian
Aid** 

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Cover photo: Tommy Trenchard/Save the Children

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THE NEED FOR ACTION IN NUMBERS



ALMOST 20 MILLION CHILDREN GLOBALLY MISSED OUT ON LIFE-SAVING VACCINATIONS IN 2018. ^[1]

IN 2018, 13.5 MILLION CHILDREN UNDER ONE YEAR OF AGE DID NOT RECEIVE THE FIRST DOSE OF THE DIPHTHERIA, TETANUS AND PERTUSSIS VACCINE.

THIS MEANS THEY WERE NOT REACHED BY THE MOST BASIC IMMUNISATION SERVICES AND DID NOT BENEFIT FROM ANY VACCINATION AT ALL. ^[2]



TWO-THIRDS OF THE WORLD'S UNIMMUNISED CHILDREN ARE LIVING IN COUNTRIES AFFECTED BY CONFLICT. ^[3]

CHILDREN LIVING IN CONFLICT ZONES ARE 3 TIMES MORE LIKELY TO DIE FROM INDIRECT IMPACTS OF WAR, SUCH AS DISEASE AND MALNUTRITION, THAN FROM BOMBS OR GUNFIRE. ^[4]



MORE THAN ONE IN FIVE CHILDREN AROUND THE WORLD ARE LIVING IN A CONFLICT ZONE, LESS THAN 50KM FROM WHERE FIGHTING IS TAKING PLACE. ^[5]

MORE THAN 29 MILLION BABIES – ONE IN EVERY FIVE – WERE BORN INTO A CONFLICT ZONE IN 2018. ^[6]



A RECORD HIGH 79.5 MILLION PEOPLE HAD BEEN FORCIBLY DISPLACED AT THE END OF 2019 BECAUSE OF CONFLICT, VIOLENCE AND PERSECUTION. ^[7]

40% OF THOSE FORCIBLY DISPLACED ARE CHILDREN. ^[7]

45.7 MILLION OF THOSE FORCIBLY DISPLACED ARE NOT REFUGEES BUT REMAIN INTERNALLY DISPLACED WITHIN THEIR OWN CONFLICT-AFFECTED COUNTRIES ^[7].



A GROWING NUMBER OF THOSE WILL SETTLE IN OVERCROWDED URBAN SLUMS.

Foreword

In October 2019, a number of public health experts declared in *The Lancet* that war is a man-made public health problem ^[8]. Armed conflicts have disastrous consequences for the mental and physical health of those people experiencing war; and for devastated health systems left unable to support them. And it's getting worse. Wars today are lasting longer and are increasingly complex. Key features of modern warfare include attacks on hospitals and healthcare workers, with civilian populations caught up in and often living amongst the violence. It is children who are most vulnerable and burdened by the direct and indirect costs of war such as disease, malnutrition, injury and mental trauma. The heavy price of war can impact children's health and wellbeing for generations to come.

Today, millions of children have been forced to flee their countries across borders because of armed conflict. Many more millions remain displaced, trapped or hiding within their own countries, often behind enemy lines or in unsanitary urban slums. It is increasingly challenging and perilous for health workers and humanitarian actors to reach children with basic aid and health services, including essential and life-saving vaccinations. The modes traditionally used to reach children with immunisations are no longer fit for purpose. Despite our global ambition to achieve Universal Health Coverage and to Leave No One Behind, children in conflict are tragically the very ones being left behind.

As I write this, the COVID-19 pandemic is gripping the world and renewing our shared understanding of the urgent necessity of vaccine coverage. Governments around the world have mobilised to support the COVAX vaccine facility and guarantee rapid, fair and equitable access to a COVID-19 vaccine for people in all countries. But there is more to do, and we cannot let the devastation of this virus get in the way of continuing to scale up access to life-saving immunisations to combat other infectious diseases. The year 2020 is crucial for new commitments and action to reach every last child affected by conflict with immunisations. The recent High-Level Panel on Internal Displacement; the Global Refugee Compact and follow-up from the first ever Global Refugee Forum; the Immunisation Agenda 2030; and the next Gavi strategic period – all these platforms offer opportunities to drive prioritisation and financial investment to ensure that no child in conflict is deprived of his or her right to immunisation as part of their right to health.

Vaccination programmes not only save lives from disease during conflict, but they can help to rebuild the health systems that will protect children in the future. While war itself generates catastrophic health problems, health is also a critical mechanism to help facilitate peace. The Health as a Bridge for Peace concept is grounded in values of human rights, health ethics and humanity ^[9]. Ensuring the provision of equitable health services in the context of armed conflict can contribute to stability and peacebuilding across societies. Effective, safe and people-centred health systems are the backbone of social institutions in every country, and immunisation services are often the first point of contact between these systems and communities. Reaching every last child with vaccinations and other essential health services can contribute to building community trust, stronger social cohesion and peaceful and inclusive societies. War is a man-made public health problem; and scaling up our ambitions to reach children in conflict with immunisations is an important step towards health stability and peace.

Through strong financial investment, and through harnessing the expertise, skills and resources of all partners – governments, Gavi, UN agencies, civil society organisations and communities – together we can go the last mile on childhood vaccinations and ensure all children are immune from preventable disease.



Paul Ronalds
Chief Executive Officer
Save the Children Australia

Executive summary

We have made considerable global progress in improving child health through immunisation. We are now at a critical juncture where decisions being made will shape the immunisation landscape for the next decade and beyond. As the world begins to action the newly-endorsed the Immunisation Agenda 2030, and as Gavi, the Vaccine Alliance, prepares for the implementation of its 2021-2025 strategy, there is near universal agreement that we must do more to reach the nearly 20 million children who remain underimmunised ^[1]. In 2018, 13.5 million children worldwide under the age of one year were not reached by the most basic form of immunisation services – the initial dose of the diphtheria, tetanus and pertussis (DTP) vaccine ^[2]. A staggering two-thirds of unimmunised children are living in conflict-affected countries ^[3]. This means the last mile in reaching these children with essential vaccinations is too often a challenging and dangerous one for children, their families and healthcare workers alike.



Vaccinations are administered at a health centres on the outskirts of Kinshasa, DRC.

Photo: Charlie Forgham-Bailey

The landscape of armed conflicts is shifting and is increasingly crowded and complex. Nearly one in five children worldwide are living in a conflict zone today ^[5]. A record high 79.5 million people today have been forced to flee from their homes due to conflict and violence ^[7]. 40 per cent of these are children. Wars are lasting longer; they are more likely to be fought within states by irregular armed groups; and they are increasingly in urban settings involving civilian populations. There are mounting attacks on schools, hospitals and healthcare workers; and an increasing denial of access to humanitarian aid by warring parties ^[5].

It is children who bear the costs of these conflicts and who are most vulnerable to the consequences of being forced to do without basic health services, including vaccinations. Children being left behind from immunisations are very likely not receiving any other essential health services. Diseases such as measles, polio, cholera, pneumonia, yellow fever and diphtheria, for which safe and effective vaccines exist, are gripping children in conflict. A complex web of factors conspires to cause severe harm to children, leading to vaccine-preventable disease outbreaks. Environmental factors such as overcrowding and unsanitary conditions are breeding grounds for disease. Malnourished children have increased susceptibility to disease and are less able to fight infection when they become sick; and in turn, some diseases increase risk of malnutrition. Health systems may be devastated through conflict, compromising the infrastructure and availability of healthcare workers to deliver vaccinations. Children are unreached, invisible and uncaptured by poor or hampered surveillance systems. These factors together lead to the spread of disease not just within conflict-affected countries, but across borders into countries where outbreaks of diseases such as measles and polio were once a thing of the past. This has devastating consequences for the world's most vulnerable children and serious implications for global health security.

Children displaced across borders into neighbouring countries have different needs than those displaced within their own countries. Often, those who are internally displaced can be more vulnerable than those who cross borders because they lack the protections and services available to refugees. A growing number of those internally displaced will seek refuge in urban areas or remain trapped or hidden in cities on the frontlines. These children may be cut off from humanitarian assistance because of insecure or geographically challenging locations.

The changing nature of war is making children harder to reach. Traditional ways of reaching and vaccinating children are no longer fit for purpose; and it is increasingly necessary to find innovative ways to immunise children in conflict.

Compounding all this, as we write, the COVID-19 pandemic is wreaking its havoc on the world. As health workers scramble to mitigate the spread of COVID-19 and support those infected, there is enormous risk that essential health services for other infectious diseases such as cholera, measles and Ebola are being disrupted or diverted, and that hard-won gains in vaccination coverage will be undone. This makes our work and our recommendations even more pressing.

The goal of this report is to shine a spotlight on the important issue of immunising children affected by conflict and to ensure vaccine investments, policies and actions address the needs of these children. The report draws on evidence from published literature; and on the insights of vaccination experts who work on the ground with Save the Children to deliver vaccinations to children in conflict zones.

While there are many areas that require further study, there are also many bright spots and accomplishments from which we can learn. With Gavi and WHO having introduced global immunisation agendas for the next decade, now is the time to work together with governments and humanitarian response partners in a strategic and coordinated manner to ensure we reach children in conflict.

Through enhanced collaboration between partners; scaled up funding; better outbreak preparedness; strengthened systems to count and track children; the integration of vaccinations with other humanitarian activities; and greater agility and flexibility, every child will be given a better chance for health and survival. Such efforts are essential contributions towards achieving the Sustainable Development Goals (SDGs), particularly SDG 3 which aims to “ensure healthy lives and promote wellbeing for all at all ages”; and the specific target to achieve Universal Health Coverage (UHC) through equitable, affordable and accessible medicines and vaccines.

Through our collective efforts, we can and must do more to stop immunisation rates from plummeting during conflict and to re-establish routine immunisations and essential health services as quickly as possible. Every child has a right to receive vaccinations as part of their right to health. Reaching every last child with life-saving immunisations is a goal we all must strive towards.

Recommendations for donor governments, Gavi and humanitarian partners working in conflict settings

1. Sharpen the global focus on children affected by conflict in the development and implementation of global immunisation and refugee/displacement policy agendas, including:

- 1.1. Make immunisations and other essential health services for refugee children a definite and non-negotiable priority in the implementation of the Global Compact for Refugees; and for internally displaced children through the High-Level Panel on Internal Displacement.
- 1.2. Ensure the newly-endorsed Immunisation Agenda 2030 prioritises and delivers for children affected by conflict, including identifying children left behind and building targeted approaches to reaching these children with clear commitments from relevant partners.
- 1.3. Gavi must demonstrate that its Fragility, Emergencies and Refugee Policy and its 2021-2025 Strategy deliver on ambitions to reach missed populations affected by fragility, with prioritisation of children in conflict settings. In particular, Gavi must ensure targeted immunisation campaigns for internally displaced children and those living in urban slums to raise immunisation coverage; and strengthen routine immunisations and essential health services to rebuild devastated health systems.

2. Continue to invest in immunisations as part of wider health system investment, and ensure an explicit focus on supporting conflict-affected countries through agile and flexible funding and partnerships, including:

- 2.1. Donors must ensure that their investment in Gavi's 2021-2025 strategy drives a strong policy agenda including progress to "leave no one behind", focusing on access to immunisation services – as part of strengthening comprehensive primary health care – for children affected by conflict.
- 2.2. Prioritise flexibility and agility with funding and civil society partnerships to ensure Gavi's Fragility, Emergencies and Refugees Policy is fit for purpose.
- 2.3. Maintain support for innovative partnership platforms such as the Humanitarian Mechanism, to improve access to affordable and timely procurement and supply of vaccines for use in humanitarian contexts.

3. Support conflict-affected countries to deliver on evidence-based operational approaches to increase the coverage of immunisations, including:

- 3.1 Advocate for the establishment of a global ceasefire, in line with Security Council Resolution 2532 and with an intentional focus on reaching the most vulnerable children with immunisations and other urgent health interventions, by the end of 2020.
- 3.2 Implement and strengthen systems to count and track children affected by conflict, including through investment in rapid expansion of technologies for disease surveillance early warning, and immunisation status tracking.
- 3.3 Support coordination of scaled-up investment in preparedness planning and vaccine stockpiling.
- 3.4 Harness opportunities for negotiated access and enable rapid deployment of resources to access children on the frontlines of conflict.
- 3.5 Build meaningful partnerships and engagement with civil society organisations at local and national levels to capitalise on their community reach and role in serving children in inaccessible or volatile locations.
- 3.6 Promote the integration of immunisation programmes with other humanitarian activities, particularly nutrition, efforts to improve access to safe water and sanitation and other essential health services. Ensure that immunisation policies are nutrition-sensitive and complementary to WASH-practices.
- 3.7 Enable all children in need to receive "catch-up" vaccines by taking an agile, gender-sensitive, culturally appropriate and evidence-based approach to age and dosing requirements.
- 3.8 Invest in dynamic monitoring and evaluation of immunisation campaigns such as focus groups and real-time surveys with beneficiaries at vaccination sites during campaign implementation; and enable flexibility and innovation to readily adapt campaigns to reach more children.
- 3.9 Deliver immunisation campaigns that are targeted to reach zero- and single- dose children and aim to strengthen and generate demand for routine immunisation



**Emergency Health Unit medical staff
in the Save the Children mobile clinic
in Bidi Bidi camp.**

Photo: Guilhem Alandry/Save the Children

The Day the War Came

The day war came there were flowers
on the windowsill
and my father sang my baby brother
back to sleep.
My mother made my breakfast, kissed my nose
and walked with me to school.
That morning I learned about volcanoes,
I sang a song about how tadpoles turn at
last to frogs.
I made a picture of myself with wings.
Then, just after lunch, while I watched a cloud
shaped like a dolphin, war came.
At first, just like a spattering of hail
a voice of thunder...
then all smoke and fire and noise,
that I didn't understand.
It came across the playground.
It came into my teacher's face.
It brought the roof down.
and turned my town to rubble.

I can't say the words that tell you
about the blackened hole that had been
my home.

All I can say is this:
war took everything
war took everyone

I was ragged, bloody, all alone.
I ran. Rode on the back of trucks, in buses;
walked over fields and roads and mountains,
in the cold and mud and rain;
on a boat that leaked and almost sank
and up a beach where babies lay face down
in the sand.

I ran until I couldn't run
until I reached a row of huts
and found a corner with a dirty blanket
and a door that rattled in the wind
But war had followed me.
It was underneath my skin,
behind my eyes,
and in my dreams.

It had taken possession of my heart.
I walked and walked to try and drive war
out of myself,
to try and find a place it hadn't reached.
But war was in the way that doors shut when
I came down the street
It was in the way the people didn't smile,
and turned away.
I came to a school.
I looked in through the window.
They were learning all about volcanoes
And drawing birds and singing.

I went inside.
My footsteps echoed in the hall
I pushed the door and faces turned towards me
but the teacher didn't smile.
She said, there is no room for you,
you see, there is no chair for you to sit on,
you have to go away.

And then I understood that war had got here too.
I turned around and went back to the hut, the
corner and the blanket
and crawled inside.
It seemed that war had taken all the world
and all the people in it.

The door banged.
I thought it was the wind.
But a child's voice spoke
"I brought you this," she said "so you can
come to school."
It was a chair. A chair for me to sit on and
learn about volcanoes, frogs and singing
And drive the war out of my heart.

She smiled and said "My friends have brought
theirs too, so all the children here can come
to school"

Out of every hut a child came and
we walked together,
on a road all lined with chairs.
Pushing back the war with every step.

Nicola Davies, children's author ^[10]

Introduction

A child is born into this place with flowers on the windowsill and a father who sings to him, as the poem goes. It is a place where children dance their way to school and feel safe in the arms of their parents when they return home.

It is also a place where this new child and his mother can receive the quality healthcare they need. About six weeks after the child goes home, the mother will get a letter, phone-call or knock at the door from the local health nurse asking the mother to bring her baby in for scheduled vaccinations. This will prevent the child contracting life-threatening illnesses such as diphtheria or polio. At the appointment, the mother and her baby will also be provided with advice about good nutrition, breastfeeding, and child development. This scenario will be repeated at 4 months, and 6 months, and 12 months, until the child has received all the most important vaccinations to keep him - and the community around him - healthy and free from vaccine-preventable diseases.

This story could be Australia or the United Kingdom today. Coverage of the third dose of the diphtheria, tetanus and pertussis (DTP3) vaccine given at about six months is a measure used to determine the strength of a country's routine immunisation system ^[11]. Australia in 2019 had 95 per cent DTP3 coverage; the United Kingdom had 93 per cent ^[2]. The World Health Organisation's Global Vaccine Action Plan 2011-2020 calls for at least 90 per cent national vaccination coverage ^[12]. Countries like Australia and the United Kingdom have already delivered on these goals. Across the world, considerable progress has been made in improving child health through immunisations. Most children today are vaccinated at the right ages and with the right doses.

This story could also be Syria in 2010; or the Ukraine in 2012. In 2010, Syria had achieved 80 per cent coverage of DTP3 ^[2]. Most Syrian children were followed by 'Patient Centred Medical Homes' which delivered quality care for mothers and their children ^[13]. In Ukraine in 2012, approximately four of five children were fully immunised with the DTP vaccine ^[14].

But flash forward some years in Syria and the Ukraine, and the story has tragically shifted. War came to these children. Years of devastating armed conflict in Syria has demolished the healthcare system and plunged the number of children immunised to a mere 47 per cent in 2018. Four years of violent conflict in the Ukraine saw the national immunisation rate nose-dive to just 19 per cent in 2016 ^[2]. These trends are consistent across other countries mired in conflict. For yet other countries experiencing decades of protracted violence, babies like the one in our story may never have received essential immunisations in the first place.

The year 2020 is critical for determining the outlook of the global immunisation landscape for children in conflict. There are promising signs; the third replenishment for Gavi, the Vaccine Alliance, exceeded its target with a record US\$8.8 billion pledged by 31 donor governments and 8 foundations, corporations and organisations. This ensures the necessary funding to deliver on Gavi's next five-year strategy. Countries and humanitarian partners are also working on implementation priorities of the Global Compact for Refugees and the High-Level Panel on Internal Displacement.

As we write though, the COVID-19 pandemic is wreaking its havoc on the world. As health workers scramble to mitigate the spread of COVID-19 and support those infected, there is enormous risk that essential health services for other infectious diseases such as cholera, measles and Ebola are being disrupted or diverted, and that hard-won gains in vaccination coverage for children in affected by conflict will be undone ^[15]. Travel restrictions and country lockdowns have threatened vaccine stockpiles and countries are at risk of vaccine stock-outs ^[16]. This makes our work and our recommendations even more pressing.

This report lays out the key areas for action needed now to ensure that every last child is reached with critical vaccinations – through enhanced collaboration between partners, scaled up funding, better outbreak preparedness and greater agility and flexibility, every child will be given a better chance for health and survival.

Imagine that the story you know, on an ordinary day, takes a very different and tragic path. Imagine if war takes away everything your children know – their home, their school, their health clinic. Imagine they are then faced with a dangerous and seemingly endless journey. Every child needs something precious to help them on that journey or to welcome them at the end of that long road. The moment of delivering a vaccination to a small child in the midst of conflict, tragedy and uncertainty can be this moment of preciousness. It is a simple act of delivering to them something which will preserve their health and their future and lay the foundations for a protected and peaceful society.

Not immune: the children affected by conflict

We have made substantial progress in improving child immunisation coverage. In 2019, about 86 per cent of children worldwide received the scheduled three doses of DTP vaccine and one dose of measles vaccine - measures frequently used to determine the strength of a country's routine immunisation programme - protecting them against diseases that can cause serious illness or death ^[1], ^[11].

Sadly though, the percentage of children being fully vaccinated has stalled since 2010 – while high, the current coverage is far from sufficient. Almost 20 million children globally missed out on life-saving vaccinations in 2018 ^[1]. In the same year, 13.5 million children under the age of one year were not reached by the most basic form of immunisation services – the initial dose of the DTP vaccine – and remain completely unimmunised (zero-dose) ^[2]. Those children being left behind from immunisations are very likely not receiving other basic essential health services as well.

Two-thirds of the world's unimmunised children are living in conflict-affected countries ^[3]. The last mile in reaching these children with essential vaccinations is too often a challenging and dangerous one for children, their families and healthcare workers alike.

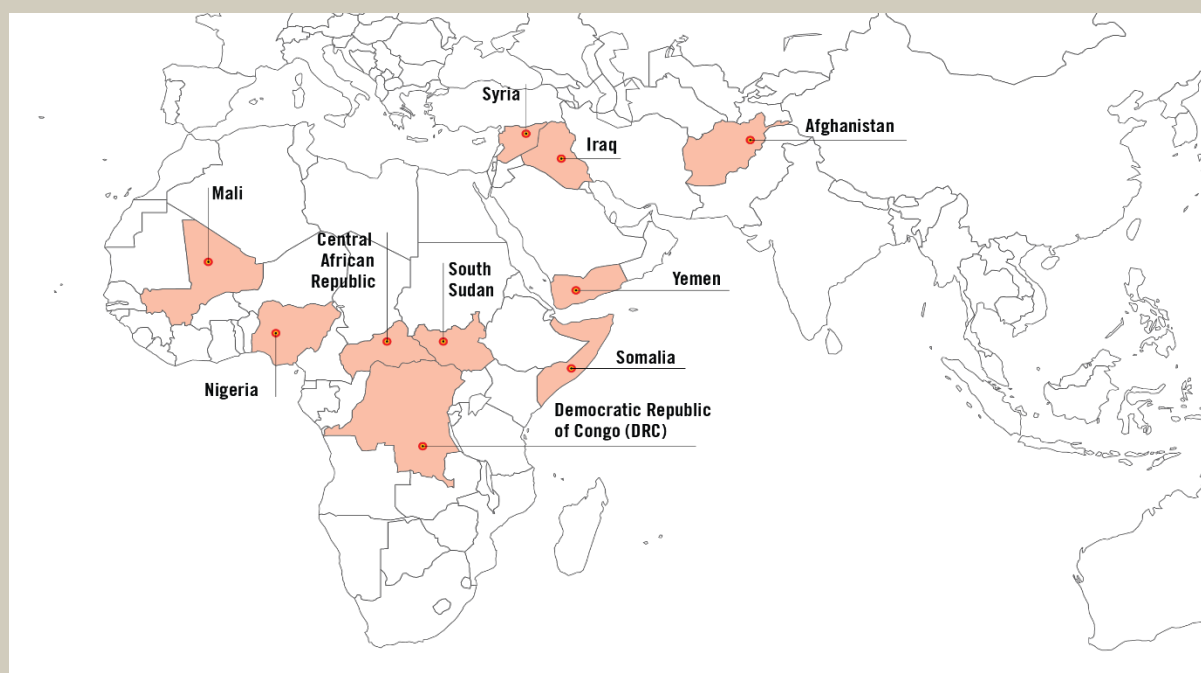
Children on the frontline

Evidence presented by Save the Children is staggering – more than one in five children worldwide are living in a conflict zone ^[5]. This means they live less than 50km from where the actual fighting takes place. Of these, 142 million children are living in high-intensity conflict zones – defined as conflict zones with more than 1,000 battle-related deaths in a single year. This includes nearly 90 per cent of Yemen's children, 70 per cent of Syria's children, and 60 per cent of Somalia's children who live in close proximity to extreme violence ^[5]. In 2018, more than 29 million babies were born into conflict-affected areas. This means that one in every five babies born in the world spent their earliest precious moments in the midst of violence and insecurity ^[6].

The landscape of armed conflicts is shifting and increasingly complex. Conflicts are becoming longer in duration and are increasingly fought within states by irregular armed groups. The Syrian war, for example, has lasted longer than the Second World War. The Democratic Republic of Congo (DRC) has been mired in a series of civil wars and upsurges in tribal conflict for over two decades. Conflicts are also increasingly urban. In Mosul in Iraq, and Mogadishu in Somalia, homes and schools are on the frontline, making growing numbers of children vulnerable to indiscriminate attack and witness to traumatic violence. There are mounting assaults on schools, hospitals and healthcare workers; and an increasing denial of access to humanitarian aid such as food, water and basic medicines including immunisations ^[5].

Save the Children has estimated the ten worst conflict-affected countries to be a child today **[see Box 1]**.

BOX 1 | The ten worst conflict-affected countries to be a child today[^]



Source: Save the Children, *Stop the war on children: protecting children in 21st century conflict*. 2019

[^] This list is based on Save the Children analysis using the following indicators: the prevalence of reports on the six grave violations against children in conflict (killing and maiming; forced recruitment and use; sexual violence; abduction; attacks on schools and hospitals; and denial of humanitarian aid); the conflict intensity; the total child population living in conflict-affected areas; and the proportion of children living in conflict-zones relative to the population of the country as a whole.

Children forced to flee

Many millions of those children facing conflict are forced to flee in search of safety. Some of these children end up displaced within their own countries; and others are forced across borders into neighbouring countries. Every single day around the world, 37,000 people are forced to leave their homes because of conflict, violence and persecution^[7]. A total of 79.5 million people worldwide had been forcibly displaced at the end of 2019 – up from 43.3 million in 2009 and reaching a record high. 40 per cent of these are children under the age of 18 years.

The Syrian crisis in particular has increased the number of forcibly displaced children to an unprecedented level. The high numbers are also driven by other conflicts in the Middle East such as Iraq and Yemen; parts of sub-Saharan Africa including South Sudan and the DRC; and the mass displacement of Rohingya refugees from Myanmar to Bangladesh.

The impacts of war on children

The direct effects of war on children include injury, psychological trauma and death ^[17]. But many more children die as a result of vaccine-preventable diseases and malnutrition than they do from bombs or gunfire ^[4]. A *Lancet* study estimated that the number of infant deaths indirectly related to conflict was more than three times the total number of deaths from war ^[4]. The longer a conflict lasts, the greater the indirect harm caused to children as essential services such as schools and health facilities stop functioning or are destroyed. A complex web of pervasive and sustained environmental, political, social and economic factors resulting from conflict have indirect and long-lasting impacts on children.

A study conducted by Medecins San Frontieres (MSF) in northern Syria found that infections for children under five such as pneumonia, measles and cholera were the largest contributors to illness during conflict. This contribution dramatically increased with time as the conflict has persisted ^[18]. The proportion of health visits for vaccine-preventable diseases increased from 15 per cent in 2013 to 70 per cent in 2016 ^[18]. In Yemen, an estimated 85,000 children died of extreme malnutrition between 2015 and 2018 – significantly more than those thought to have died as a direct result of warfare ^[19]. Even when malnutrition does not itself cause death, it can damage the ability to fight disease and impair growth, brain development and metabolic function. Malnutrition can also lead to life-long and intergenerational impairments.

Save the Children estimates that in the ten worst conflict-affected countries for children **[see Box 1]**, nearly 870,000 children may have died in the past five years due to these ancillary effects ^[5].

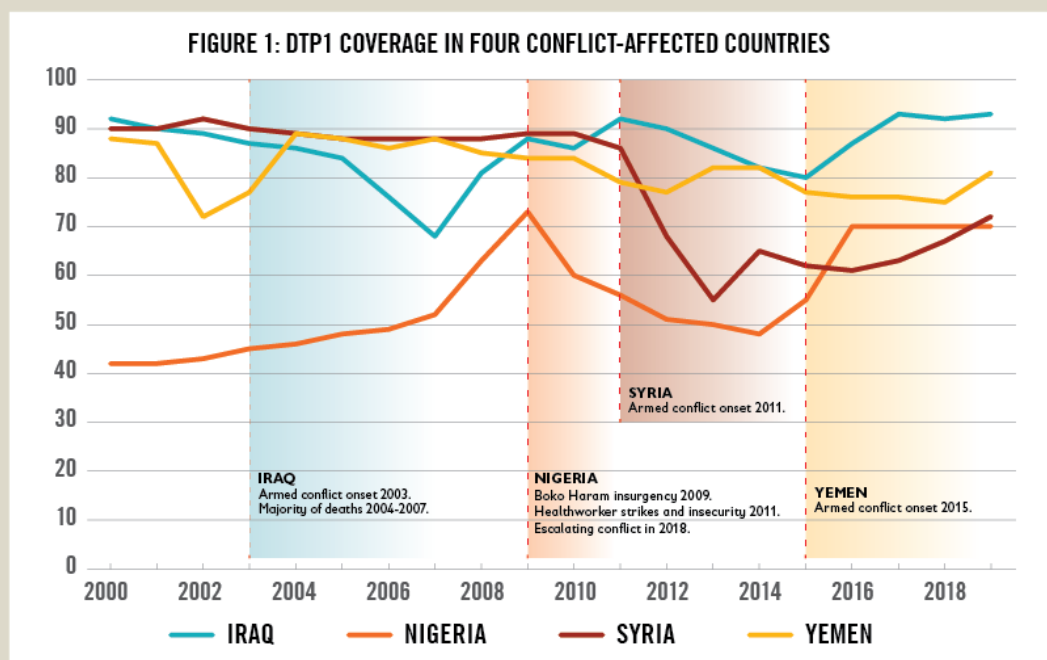
As disease and malnutrition increase due to conflict, access to healthcare also becomes more difficult. The destruction of health facilities and services, and the increasing deliberate targeting of hospitals and healthcare workers, limit access and quality of available care ^[17]. Families may be reluctant to seek healthcare at facilities, fearing they may be harmed during an attack ^[20]. Children in areas affected by conflict are less likely to receive routine vaccinations. When forced to flee, vulnerabilities of children to vaccine-preventable diseases, psychological trauma and abuse and exploitation are further increased. Children face a higher risk of death during the year after they have been displaced ^[21].

The effects of armed conflict on children reverberate long after violence has ceased ^[20]. A recent Save the Children report estimates that at least 24 million children living in conflict zones require some form of mental health support; and more than seven million children are at serious risk of developing severe mental health disorders, such as schizophrenia, bipolar disorder, severe depression or anxiety, and severe post-traumatic stress disorder ^[22]. For those millions of babies born into the stress and chaos of conflict, the lasting impacts on learning, behaviour and physical and mental health at the beginning of life are potentially calamitous ^[6].

The impacts of war on immunisation coverage

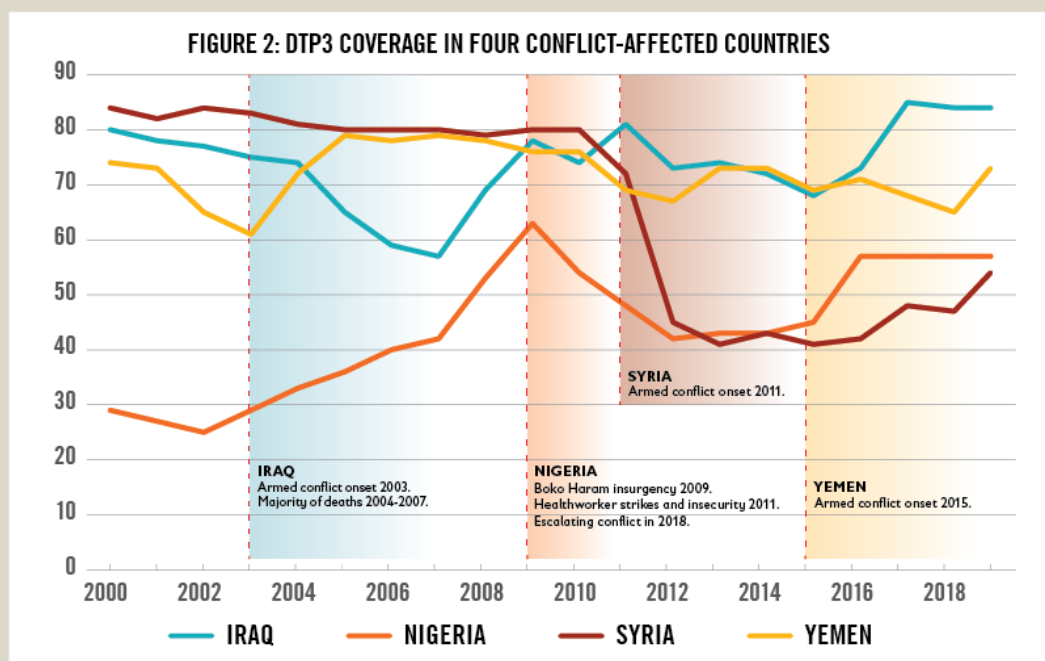
Children affected by conflict, who face increased risk of exposure to vaccine-preventable diseases, are disproportionately missing out. Outbreaks of intense violence are associated with dramatic reductions in immunisation coverage for children. In Syria, for example, the proportion of children who received all three doses of the DTP vaccine plummeted from 80 per cent in pre-conflict Syria in 2010, to a mere 47 per cent in 2018 ^[2]. These trends are consistent across other countries mired in conflict. For yet other countries experiencing decades of low-intensity protracted violence such as Nigeria, South Sudan and the DRC, many children born into conflict may never have received immunisations in the first place **[see Figures 1-3]**.

Figure 1 shows the coverage of the first dose of DTP in four of the worst conflicts to be a child from 2000 to 2019. ^[2]



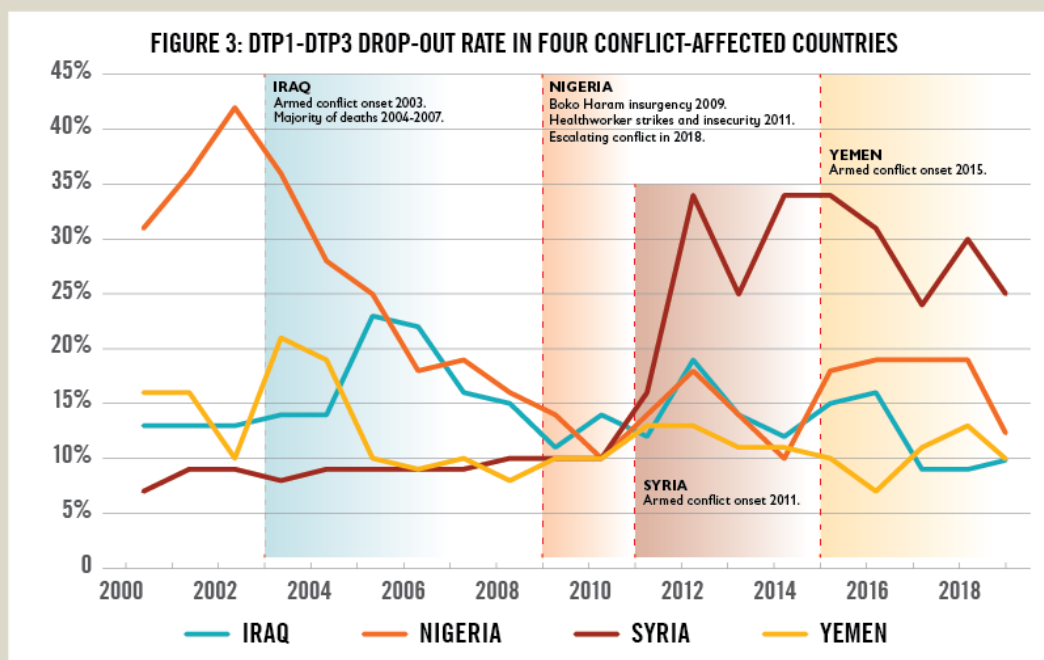
Source: WHO/UNICEF Estimates of National Immunization Coverage (WUENIC) 2019

Figure 2 shows the coverage of the third dose of DTP in four of the worst conflicts to be a child from 2000 to 2019. ^[2]



Source: WHO/UNICEF Estimates of National Immunization Coverage (WUENIC) 2019

Figure 3 shows the first to third doses of DTP vaccine drop-out rate in four of the worst conflicts from 2000 to 2019. ^[2]



Source: WHO/UNICEF Estimates of National Immunization Coverage (WUENIC) 2019

All three figures demonstrate the impact of onset of conflict on vaccination coverage for children; or the impact of prolonged war on a health systems ability to increase coverage to the needed levels to achieve protection from disease. Drop-out rates between the first and third doses of DTP provide information on levels of access, demand and service delivery. In strong systems, children have the right number of contacts with the system at the right times to ensure high coverage with three doses of the DTP vaccine. Weaker systems may be able to reach a child with the first dose, but not the third dose as **Figure 3** shows. The stories are mixed however, revealing a complex relationship between conflict and vaccination coverage.

Invisible and uncounted

Despite the overwhelming number of children living in conflict zones or displaced as a result of conflict, our understanding of the scale of impacts on children and the nuances of these impacts is very limited ^[20]. We do not know enough about children who are displaced or those children on the move: their age and sex; where they come from; where they are going; whether they are fleeing with their families or whether they are alone; and what their vulnerabilities are.

Moreover, the knowledge and tools required to effectively protect and promote the health of children affected by conflict are sorely lacking. Whilst we often know which child health interventions work in low-income settings and how best to implement them, our understanding of what more can be done to find and protect children affected by conflict remains limited ^[23]. Reaching children affected by conflict poses complex and specific challenges for the implementation of health interventions such as vaccinations.

The vaccine-preventable diseases gripping children affected by conflict

Measles

Measles is a highly contagious viral disease and one of the major causes of child deaths in humanitarian emergencies. Measles highlights the intricate relationship between vaccine-preventable diseases and nutrition: measles contributes to death by worsening malnutrition; and malnourished children are more vulnerable to contracting measles, particularly those with low Vitamin A levels ^[24], ^[25]. Many child deaths from diarrhoea and pneumonia may also be linked to measles ^[25].

Routine immunisation against measles occurs for babies between 9-12 months old, with a second dose between 15-18 months ^[26]. To prevent outbreaks of measles, above 95 per cent coverage is needed within communities and across countries ^[27]. When enough people in a community are immunised against measles, it is harder for disease to spread and those unable to be vaccinated such as infants are still protected. This is known as “herd immunity”. Because of the need for high coverage to achieve herd immunity, the measles vaccine is applied nearly universally through campaigns in conflict emergencies where routine immunisations are interrupted. In measles campaigns, two important aspects help to reduce child deaths from measles: expanding the target-age group to include all children under 15 years who may have missed routine immunisations and to infants under six months; and reducing the dosing schedule to extend the vaccine supply ^[28]. These factors result in the faster achievement of herd immunity. One review found that preventable measles deaths occurred in campaigns that only targeted children under five ^[25].

Deaths from measles among children displaced by conflict are often higher than in stable populations because of the disruption in routine immunisations ^[29]. Measles outbreaks can impact neighbouring countries or host communities in which refugee children live. Even amongst highly vaccinated populations, the high level of immunity required to halt transmission means that relatively small numbers of unvaccinated children can create immunity gaps and contribute to the spread of disease.

Like most vaccines, the measles vaccine must remain chilled and is administered by injection, creating challenges for health workers trying to access hard-to-reach children in conflict ^[30]. In Yemen, maintaining the cold chain – the system of transporting or storing vaccines within a safe temperature to ensure vaccine stability – is hampered by a lack of fuel to support generators ^[31]. Local residents have reported concerns of vaccine effectiveness which has deterred them from getting their children immunised against measles.

Polio

Polio is another highly infectious viral disease that can cause irreversible paralysis. Following more than two decades of successful immunisation campaigns through the Global Polio Eradication Initiative across 125 endemic countries, polio is now endemic in just three remaining countries: Afghanistan, Pakistan and Nigeria. These countries have experienced years of armed conflict which has continued to compromise immunisation activities ^[14]. In 2016, a polio outbreak was declared in the Boko Haram-controlled territory of Nigeria where only 30 per cent of the area was accessible to polio vaccination workers because of insecurity ^[32]. Intensified conflict in Pakistan and Afghanistan has been associated with targeted attacks on polio vaccinators, negative vaccination propaganda, vaccination bans by extremist groups and general insecurity impeding the access of polio teams to communities, leaving many children unvaccinated ^[33].

Continued circulation of polio in these countries poses a risk for outbreaks in polio-free regions of the world. Since 2000, polio outbreaks have been reported from about 30 countries formally certified as polio-free ^[34]. An outbreak in Syria and Iraq during 2013-2014 after importation from Pakistan was the first incident of polio in both countries in a decade ^[35]. A coordinated mass vaccination campaign by eight national governments in the Middle East halted the outbreak within six months ^[29]. This campaign saw over 2.7 million Syrian children and 23 million children in neighbouring countries vaccinated ^[30]. Despite this, ongoing conflict and the barring of vaccines reaching children in besieged areas led to a second polio outbreak in Syria in 2017, paralysing more than 30 children under five years ^[36], ^[37].

Diarrhoeal diseases: cholera and rotavirus

Diarrhoeal diseases are one of the leading causes of death among children under five years in emergency settings^[29]. Cholera is an acute diarrhoeal infection caused by ingesting contaminated food or water. If left untreated, the infection can kill within hours. In the last decade, large-scale and severe cholera epidemics have occurred in countries affected by conflict including Iraq, Sierra Leone, Somalia, South Sudan and Yemen^[38]. Yemen recorded over 1 million cholera cases and 2500 deaths from cholera during 2016 to 2018; and South Sudan reported more than 6,000 cases in 2014^[39],^[40],^[38]. In Yemen, deliberate airstrikes on water desalination systems and the weaponization of water systems by warring parties have reduced water infrastructure and access to huge areas and potentially driven the scale of the cholera epidemic^[38].

A multisector response to cholera prevention and treatment includes safe water, sanitation and hygiene, case management and cholera vaccination. The oral cholera vaccine has been developed as a critical health intervention for people in emergency settings and demand has rapidly grown since its introduction. Between 1997 and 2013, just 1.5 million doses of cholera vaccine were used worldwide. Between 2013 and 2018, the number of used doses had increased to 36 million^[41]. Global commitment to tackle cholera – steered by the Global Taskforce on Cholera Control - has led to remarkable decreases in the number and extent of cholera outbreaks^[40].

Rotavirus is the most common cause of severe diarrhoeal disease in young children^[42]. WHO recommends introduction of the rotavirus vaccine into national immunisation programmes where diarrhoeal deaths account for ten per cent of deaths in children under five; but rotavirus vaccination coverage in conflict-affected countries remains low^[43].

Respiratory diseases: pneumococcal and Haemophilus influenza type B (Hib)

Respiratory diseases are another leading cause of death amongst children under five. The most common types include streptococcus pneumoniae (pneumococcus) and Haemophilus influenza type B (Hib), which often cause pneumonia. Measles can also predispose children to pneumonia^[44]. Several routine vaccines protect against pneumonia, including the measles vaccine and DTP. Effective vaccines also exist to prevent both pneumococcus and Hib, but they are rarely administered. Until recently, the high price of the pneumococcal conjugate vaccine (PCV) has been an important factor preventing children affected by conflict from being protected against this cause of pneumonia^[45]. The Humanitarian Mechanism, established in 2017 by Save the Children alongside partners WHO, UNICEF and MSF, has focused on improving access to affordable and timely procurement and supply of the PCV vaccine for use in humanitarian emergencies^[46].

Yellow Fever

Yellow fever is a highly contagious viral haemorrhagic disease transmitted by infected mosquitoes which thrive in overcrowded areas such as urban settings and camps. One in five people who contract yellow fever will die from it; and around 50 per cent of severe yellow fever cases will die if they are not treated^[47]. Yellow fever vaccine is the main preventive measure which provides lifelong protection. The vaccine has been introduced in routine immunisation programmes in 36 of the 40 countries at risk for yellow fever in Africa and the Americas. In these countries, coverage is estimated at only 49 per cent^[42]. Four high-risk countries – Ethiopia, South Sudan, Sudan and Uganda – have yet to introduce the vaccine into their routine systems^[27]. Several outbreaks of yellow fever have occurred in recent years, notably in Nigeria and the DRC^[27].

Diphtheria

Diphtheria is a serious bacterial infection that was largely eliminated in developed countries decades ago. Diphtheria remains a problem in countries with poor routine immunisation coverage. Several outbreaks have been reported in conflict-affected countries in recent years. The low basic immunisation coverage amongst Rohingya refugee children in Bangladesh caused a large outbreak of diphtheria to spread through the refugee camps^[27]. One study exploring a serious diphtheria outbreak in Yemen during 2017-2018 found that the risk of an outbreak increased by 11-fold if the area was experiencing a protracted conflict^[48]. Children under 15 years were the most affected during this diphtheria outbreak; and children under five years were mostly likely to die from the disease. The outbreak reflected a huge gap in immunisation coverage in the last three years due to violence and the collapsed health system in Yemen.

How children affected by conflict miss out on vaccinations

The following is a summary of the risk factors for children affected by conflict – those who are displaced across borders, within countries, or hiding on the frontlines – which lead to vaccine-preventable disease outbreaks. It is a complex web of factors which conspire together to cause severe, and preventable, harm to children ^{[24], [29], [14], [49], [20]}.

PREVAILING ENVIRONMENTAL FACTORS CREATE THE BREEDING GROUND FOR VACCINE-PREVENTABLE DISEASE OUTBREAKS

- Mass population movement as children flee violence – this is the trigger for most risk factors.
- Overcrowding experienced in camps, urban settings, besieged cities, temporary shelters and boats affects both hygiene-related diseases such as diarrhoea, and increases the transmission of disease from person to person.
- Unsafe water and unsanitary conditions increase the risk for diarrhoeal diseases and compound risks for other vaccine-preventable diseases.

THE CYCLE OF MALNUTRITION AND VACCINE-PREVENTABLE DISEASE

- Food shortages and exposure to contaminated food leads to poor nutrition – undernourished or malnourished children are more susceptible to, and more likely to die from, infectious diseases, many of which can be prevented by vaccines.
- Some vaccine-preventable diseases such as measles and diarrhoeal diseases increase risk of malnutrition.

HEALTH SYSTEMS ARE DEVASTATED THROUGH CONFLICT

- Essential health services including routine immunisation programmes are compromised or stopped altogether.
- Health workers may be poorly trained or there are health worker shortages to deliver vaccinations.
- Cold chain and infrastructure for storing and transporting vaccinations are damaged or destroyed.
- Direct targeting and killing of health workers and destruction of hospitals and health facilities further devastate health systems.
- Families may fear seeking healthcare due to insecurity and violence.

CHILDREN ARE UNCOUNTED, HARD-TO-REACH AND INVISIBLE

- Surveillance and vaccination tracking systems may be destroyed, poor or unable to reach all children in urban settings, behind frontlines, or hard-to-reach geographical locations – making disease outbreaks more likely, harder to detect, and harder to control.
- Insecurity or logistical challenges hampers ability to reach all children.

UNSTABLE GOVERNMENTS AND POOR AGENCY COOPERATION TO TACKLE OUTBREAKS

- Governments in conflict-affected countries may be absent or unstable and unable to provide essential services for populations; or they may be the very perpetrators of violence themselves.
- Governments in host countries may be overwhelmed by mass population displacement.
- In both situations, there is often a lack of funding for outbreak preparedness, re-establishing routine immunisations and responding to outbreaks.
- Poor coordination between multiple agencies providing health care can further compromise the ability to respond quickly and flexibly.

OUTBREAKS

- When outbreaks occur in these settings, they spread rapidly and with prolonged transmission, within and across borders.
- Diseases are introduced into previously non-endemic areas and children with no immunity may be exposed. This can include the spread of vaccine-preventable diseases across borders into other countries, posing risks for regional and global health security.
- The cycle continues: poor surveillance, unavailable treatment, shortages in trained health workers, logistical and security challenges with outbreak response planning and implementation, leading to the increased risk of the spread of disease worldwide with severe implications for children.

Immunisations risks for children forced across borders

Where they come from and where they end up

Those children and families who flee across borders into neighbouring countries often receive the most international attention. The long and arduous journeys faced by those forced to flee across borders, in often overcrowded and unsanitary conditions, increases the physical and psychological burden of war and overall health risks, particularly for children. Refugees make up 26 million, or 33 per cent, of the total number of displaced people ^[7]. The majority of refugees will settle in a country neighbouring their country of origin. In 2019, more than two-thirds of all forcibly displaced people worldwide came from just five countries ^[7]: Syria (6.6 million); Venezuela (3.7 million); Afghanistan (2.7 million); South Sudan (2.2 million); and Myanmar (1.1 million).

The five countries hosting the greatest number of forcibly displaced populations are ^[7]: Turkey (3.6 million); Colombia (1.8 million); **Pakistan (1.4 million); Uganda (1.4 million);** and Germany (1.1 million). Two out of five of these countries (in bold) are themselves classified as fragile ^[51].

Refugee children may arrive at their destination country with incomplete or interrupted immunisation schedules, leaving them vulnerable to vaccine-preventable diseases on arrival. This can create a public health challenge for underimmunised or unvaccinated populations in host countries ^[52].

Several challenges encountered on arrival in a host country can further limit access to routine or catch-up vaccinations for children: refugees may continue to move through countries before their final destination, making it difficult to receive the full and consecutive doses of particular vaccines at the right ages; there is very often no information on the immunisation status of refugees; some host countries are facing severe economic crises which challenges refugee access to free national healthcare services; refugees may refuse registration with medical authorities for fear of legal consequences; and there is a lack of coordination among public health authorities of neighbouring countries which may result in either duplication of vaccinations or under-vaccinating ^[53].

Additional barriers to accessing immunisation services include: lack of knowledge by communities that services exist or that they may be entitled to them; social isolation; poverty and low literacy levels; language and cultural barriers; and inadequate training of healthcare professionals to work with refugees ^[52]. Vaccination schedules in the host country may not always align with those in the country of origin, creating further challenges in providing interventions that are well understood by refugees ^[29].

Mimesis

*My daughter
wouldn't hurt a spider
That had nested
Between her bicycle handles
For two weeks
She waited
Until it left of its own accord*

*If you tear down the web I said
It will simply know
This isn't a place to call home
And you'd get to go biking*

*She said that's how others
Become refugees isn't it?*

FADY JOUDA, POET ^[50]

Protecting refugee children from disease

Political and social structures often struggle to rise to the challenge of responding to forced migration across borders in a compassionate and humane way. It is often a debate that is embroiled in xenophobia, discrimination and stigma.

Until recently, refugee policies have focused on national health security and the avoidance of spreading diseases abroad ^[52]. The large swathes of refugees from conflict-affected zones crossing national borders in recent years has seen the discourse shift to one of Universal Health Coverage and the right to health for all. In 2018, UN Member States endorsed two landmark “compacts” designed to improve the global response to refugees and migration: the *Global Compact on Refugees*; and the *Global Compact on Migration*. Following the unprecedented influx of those fleeing conflict from predominantly Syria into Europe, in 2015, WHO, UNICEF and UNHCR released a joint statement on principles for vaccinating refugees, asylum-seekers and migrants in the WHO European Region calling for the “strengthening of national and regional health systems to ensure that all refugees and migrants have easy access to the needed health services,” that are served according to “the principles of equity, solidarity, human rights and dignity” ^[54].

In general, regional health policies recommend that emergency care should be available to all refugees regardless of legal status ^[52]. But differences exist between countries in access requirements to health services; and preventive healthcare strategies such as immunisation are often lost through the provision of emergency care and treatment for late presentation to care ^[52]. These delays in the adoption of preventive health programmes can cause vaccine-preventable disease outbreaks in refugee communities and the wider host community.

A 2017 WHO review found that only 11 countries in the European region had a national immunisation programme that considered refugees ^[55]. Often refugees will move from country to country before they settle. Methods to track and share immunisation data varies between countries ^[52]. Overall, information on the immunisation status of child refugees is often lacking because they may not be specifically targeted in national surveillance programmes or health surveys ^[52].



SPOTLIGHT: PERILOUS JOURNEYS TO TURKEY, GREECE AND BEYOND

Turkey hosts the largest number of refugees in the world (3.6 million), the majority of whom have fled war in Syria, Afghanistan and Iraq. A limited number of refugees are living in camps around the border, and others are spread throughout the country ^[56]. Those located in formal camps are able to access healthcare facilities located in the camps; but only 60 per cent of those residing in the community access Turkish health services ^[56]. This is likely due to a lack of healthcare information, language barriers, or the lack of government-issued identification necessary to utilise Turkish services ^[56].

The massive and rapid increase in refugees in Turkey has overwhelmed the existing health system, leading to shortages in immunisation supplies, medicines, and access to clean water and nutritious food ^[56]. Refugees generally live in crowded and unsanitary conditions with poor prospects for employment. This heady mix of risks is leading to the re-emergence of previously eliminated infections in Turkey such as measles, polio and multidrug-resistant tuberculosis ^[56].

The harsh conditions faced by refugees in Turkey has seen many take the perilous route from Turkey to Greece, often paying smugglers to make the short journey by sea with the prospect of reaching destination countries in Northern Europe ^[57]. Like Turkey, Greece's health system, already weakened by the economic crisis, has been significantly challenged to enact an effective health response which meets the needs of refugees ^[57]. Those refugees now residing in urban communities in Greece and reliant on the Greek health system face a lack of tailored health services that consider culture, language and specific health needs ^[57].

Refugees that have continued on the journey to reach other parts of Europe continue to face barriers in accessing health services. A study exploring the vaccination needs of refugee children in Denmark from eight countries of origin across Africa and the Middle East found that nearly one-third of refugee children were in need of further vaccinations ^[58]. This exposes the difficulties in immunising children who are constantly on the move through transit countries and who may be missing out on essential vaccines at different points in their journey. This situation is intensified by the need for many vaccines to be given in repeated doses at specific intervals.



SPOTLIGHT: CHILD REFUGEES SEARCHING FOR SAFETY IN NEARBY LEBANON

The influx of Syrian refugees crossing the border into Lebanon during the Syrian conflict has posed major challenges to vaccination coverage for all children in Lebanon ^[59], ^[60], ^[61]. Since 2012, more than 1.2 million Syrian refugees have registered with UNHCR in Lebanon: 30 per cent of Lebanon's total population. This makes Lebanon the country with the highest per capita concentration of refugees in the world ^[59].

The massive displacement of Syrians has led to overcrowding and unsanitary living conditions, heightening the risk of vaccine-preventable disease transmission. The majority of Syrian refugees are not living in formal camps but are dispersed throughout the country, making refugee children harder to find and reach. Settlement patterns into poorer neighbourhoods has meant that the pressure introduced by refugees is disproportionately affecting the poorest and most underserved areas of Lebanon. This is leading to increased vulnerability of both populations and social tensions and competition for access to basic healthcare services and employment opportunities ^[61].

Lebanon's routine immunisation services have been overwhelmed and disrupted as they struggle to cope with the unprecedented increased in demand for vaccines ^[59], ^[60]. Several studies have found that many Syrian children lack adequate immunisation coverage; coverage levels are lower amongst Syrian children than children from host communities; and high drop-out rates are making many Syrian children susceptible to vaccine-preventable diseases ^[60]. Lebanon is experiencing measles outbreaks particularly amongst Syrian refugees. National immunisation campaigns aimed at filling gaps in measles and polio vaccines have been launched as a result ^[59].



With our partners, Save the Children staff work in Syria to carry out a Polio vaccination campaign in North West Syria for children aged 1 day to 5 years old.

Photo: Save the Children

Immunisation risks for internally displaced children

“Because they haven’t crossed a border, they receive pitiful global attention”

Jan Egeland, Secretary-General, Norwegian Refugee Council ^[62]

Where they come from and where they end up

Stories of desperate attempts to cross rough seas in overcrowded leaky boats in search of refuge tend to personify the image of those fleeing war. But even when children do not cross national borders, they can face perilous journeys seeking sanctuary in their own countries. Conflict displaces even more people within their own borders than beyond them. More than 57 per cent of displaced people – 45.7 million of the total number of forcibly displaced people due to conflict – are not refugees but remain within their own country ^[7].

The ten largest internally displaced populations (IDPs) can be found in ^[7]: Colombia (7.9 million); Syria (6.1 million); DRC (5 million); Yemen (3.6 million); Somalia (2.6 million); Afghanistan (2.6 million); Nigeria (2.2 million); Sudan (1.9 million); Ethiopia (1.7 million); and South Sudan (1.7 million). Nine out of ten of these countries are considered fragile ^[51].

On top of new numbers of internally displaced people, many people who have been displaced for long periods are still unable to return to their homes ^[62]. More than one million people in Iraq attempted to go home in 2018 only to find that the homes they knew were no longer habitable and no essential services existed. In some cases, those who attempt to go home end up returning to camps because basic health services are more readily available there. For many people enduring protracted conflict, internal displacement may not be a once-in-a-life time event ^[63]. They may try to return home when there is a halt in violence; and move again when the security situation worsens. They may have to constantly start over to rebuild their lives.

Internally displaced populations may be scattered across large and often insecure rural regions affected by protracted low-intensity conflict, for example, in the eastern DRC, northern Uganda and Darfur in South Sudan ^[64]. Yet others who seek refuge internally will reach formal humanitarian camps. But a large and rapidly growing number will seek refuge where they can in urban areas. The growth in urban slum populations has been greatest in countries affected by conflict ^[65]. In Syria and Yemen, millions remain trapped or hiding in besieged cities at the frontlines of war owing to a lack of safe places to run to ^[66], ^[49]. The heady mix of large numbers of people living in urban dense areas with poor access to clean water and sanitation, creates a breeding ground for vaccine-preventable diseases to spread.

“Urban slums are not new, but the scale and prevalence we are seeing is. We are ill-prepared for their rate of growth, and the associated increase in infectious outbreaks. In 2008, roughly 60 per cent of internally displaced people ended up in rural areas, the majority in humanitarian camps. By 2015, this situation had reversed. Roughly 60 per cent are now in urban areas, just 1 per cent of them in camps.

...When people live in hiding, they effectively become invisible to governments and global health agencies trying to help them. This could lead to major outbreaks of infectious disease, quickly depleting emergency vaccine and drug stockpiles, which are not designed to cope with simultaneous outbreaks.”

Seth Berkley, CEO, Gavi, the Vaccine Alliance ^[67]

The changing nature of war today means growing insecurities in reaching the most vulnerable children. Targeted attacks on hospitals and health workers can dramatically limit the ability of humanitarian workers to provide vaccinations. In unstable regions of Nigeria and Pakistan, vaccination programmes have been severely disrupted through the deliberate targeting and killing of vaccination workers ^[68].

Many children may be in geographically challenging or insecure locations, cut off from humanitarian assistance, where access becomes extremely difficult. During warfare in the last century, opposing military forces would traditionally allow basic health services, particularly child immunisations, to cross frontlines. These are provisions rooted in International Humanitarian Law which provides rules to protect access to health care and bind States and non-State armed groups ^[69]. Today, negotiating such access is far more complex ^[66]. The provision of vaccinations in areas of active armed conflict is further compromised by curfews and reduced geographical access due to roadblocks and checkpoint closures ^[68].

Other major challenges in getting vaccinations to children within conflict zones include insufficiently trained staff, insufficient supplies and equipment, and overwhelmed existing capacities when new waves of displaced people arrive. The devastation of health infrastructure, including the cold chain equipment to deliver vaccinations to children effectively and safely, creates further challenges ^[29]. Health workers may not be able to keep vaccines at the appropriate temperature over long distances to reach all children, rendering the vaccines ineffective.

Protecting internally displaced children from disease

Unlike refugees who are generally protected through a number of international and national legal instruments, there are no legally binding instruments to protect internally displaced people and they do not need to be formally registered ^[63]. The 1998 *Guiding Principles on Internal Displacement* ^[70] – a set of actions which outline the responsibility of national governments for the wellbeing of people displaced in their countries – are not legally binding. Neither the Global Compact on Refugees or the Global Compact on Migration address the needs of internally displaced people ^[71]. In response to these compacts, a number of countries sent a letter to the UN Secretary-General calling for a High-Level Panel on Internally-Displaced Persons to “galvanize global attention and action on IDPs” ^[72]: a call which has recently been answered ^[73].

Often, governments may be either unable to support those people who are forcibly displaced within their countries because of weak systems, or unwilling to respond effectively. In some cases, such as Syria, they are the very cause of conflict and internal displacement ^[71].

Although many agencies support the rights and protection of the internally displaced, there is a lack of accountability within the global system and responses to IDP crises are usually significantly underfunded by donor governments. Children who are internally displaced are very often invisible to governments or humanitarian agencies, overlooked or undercounted in health surveys and censuses. Because they do not reside in camps, it is difficult to know who and where they are and how to prioritise services to reach them. Urban slums can grow rapidly with constant movement in and out, making it extremely difficult to track children or measure the effectiveness of immunisation programmes in these areas ^[65].

Traditional vaccination strategies amongst people displaced by conflict have tended to focus on those in camp settings with surprisingly little focus on children who are internally displaced ^[25], ^[74], ^[49]. However, conflicts like Syria and Yemen demonstrate that this might not be the most important scenario to contend with in the 21st century. The dramatic shift in numbers of internally displaced people who flee to, or remain entrapped in, urban settings rather than formal camp environments means that new, flexible and innovative action to reach every last child with immunisations is urgently needed.



SPOTLIGHT: RUNNING AND HIDING IN SYRIAN CITIES

More than a third of the entire population in Syria have been uprooted from their homes and sought refuge within safer zones of the country mainly in urban areas ^[66]. Millions also remain trapped or hiding in besieged cities with little or no access to healthcare ^[67]. While much has been reported about the health of Syrian refugees, far less is known about those children remaining in Syria ^[76].

The country is experiencing outbreaks of measles, polio, meningitis, typhoid and drug-resistant tuberculosis in areas where immunisation services have been disrupted for significant periods. The constant movement of people, the complete lack of routine immunisations, limited access to other health services and poor water and sanitation has created ideal conditions for outbreaks ^[76]. An MSF study on the risks of vaccine-preventable diseases amongst Syrian children found that only one in 51 children less than 12 months of age was fully vaccinated; and only one in five children under five years had complete vaccination coverage ^[76]. Younger children in particular have been severely impacted.

Attacks on patients, health workers and health facilities by state forces have created a climate of fear for patients to attend medical clinics. Repeated attacks have led to the exodus of qualified health workers from Syria and reduced international staffing by humanitarian aid agencies ^[76]. An underground network of makeshift health clinics has been created, but this cannot replace the medical services needed and remaining health workers are forced to take on additional responsibilities beyond their expertise ^[68], ^[76]. Getting vaccines to children in need in Syria is brutally hampered by the dangers that health workers face and the denial of humanitarian aid.

The dramatic drop in childhood vaccination coverage in Syria is also owing to lack of funds. Before the onset of conflict, Syria was a country funding its own vaccination programmes. Now, the UN's Humanitarian Response Plan (HRP) for Syria, which finances the costs of immunisation activities, is significantly short of funds. By the end of 2019, only 65 per cent of the HRP's funding needs had been met ^[77].



SPOTLIGHT: YEMEN'S MALNOURISHED CHILDREN

The war and siege in Yemen started in 2015 and continues to date, with the majority of Yemenis remaining within the country^[78]. Approximately 2.2 million children in Yemen are acutely malnourished, creating extreme vulnerability to disease and death^[48]. A child dies every ten minutes from preventable causes in Yemen – far more than those killed in the violence – because the conflict is preventing them from receiving the vaccinations, essential healthcare and nutrition they urgently need^[79]. There are major shortages of health equipment and supplies; health workers have not been paid in more than two years; and communities experience almost daily attacks on infrastructure such as hospitals and water points. Local power outages affect the provision of most services and water supplies are severely limited, with a direct impact on the cold chain of immunisation supply^[78].

In 2017, nearly one million Yemenis were infected with cholera – a tragic reminder of the impacts of conflict on the spread of vaccine-preventable disease^[27].

Photo: Jonathan Hyams/Save the Children



Immunisation risks for global health: risk for one means risk for all

“Infectious diseases do not recognise borders, and everyone – not just children – is at risk, whether in the besieged areas or in areas where the regime is present. If the children remain unvaccinated, there’s a real threat of an international epidemic if diseases spread”

Tariq Khawam, journalist, Syria ^[36]

The changing nature of modern armed warfare also contributes to an evolving fragility that not only impacts those children living through conflict, but also threatens global health security. While the political borders of a conflict can be demarcated, diseases are uncontained by such borders. The influx of refugees and outbreaks of vaccine-preventable diseases such as measles and polio into Jordan, Lebanon, Iraq and Turkey, for example, highlight the rippling consequences of the deadly and protracted Syrian war ^[30]. Yemen had not experienced cholera since 2011 until the devastating outbreak in 2017 which could be traced to earlier outbreaks in East Africa [38]. No country is immune from the spread of old and emerging diseases. While ensuring the health of those children affected by conflict is first and foremost their human right, it is also a critical part of protecting global health.

With 29 million new babies born into conflict in 2018, and 20 million children who missed out on routine immunisations in the same year, it would only take one or two years of missed vaccinations for diseases like measles or diphtheria to skyrocket in these populations.

“As all children enter this world unvaccinated, in effect, it’s like having to start from scratch every year”

Seth Berkley, CEO, Gavi, the Vaccine Alliance ^[80]

Antimicrobial resistance is another burden disproportionately imposed on those living in and fleeing from conflict zones which has implications for global health security. Antimicrobial resistance is the ability of some bacteria to survive treatment with antibiotics. Overuse or incorrect use of antibiotics has led to increases in resistant bacteria, resulting in some strains of disease that cannot be effectively treated ^[81]. Unsanitary and overcrowded living conditions, alongside lack of access to vaccines and antibiotics and overall poor health, may favour the emergence of antimicrobial resistance. Immunisations help to curb the spread of antimicrobial resistance by preventing diseases that might otherwise need to be treated with antibiotics. This decreases the opportunities for the development of resistance. For example, universal coverage of the PCV vaccine has been estimated to prevent 11.4 million days of antibiotic use in children under five years of age across 75 low- and middle-income countries ^[82]. This is yet another compelling reason why vaccination among children affected and displaced by conflict must be integral to any immunisation strategy.

Operational approaches needed to reach every last child

Building on successes.....and adapting to changing trends

Delivering immunisations to children in areas affected by conflict may seem like an impossible challenge. There are lessons which can be drawn from successful immunisation programmes, from evidence-based research and from listening to those at the vanguard of immunisation campaigns which will help to carve a way to a better future in reaching these children. To adapt to the changing trends in conflicts, strategies need to go beyond those that have been used in the past. Successful and underutilised approaches need to be scaled up. This section outlines the key approaches needed for reaching every last child. These approaches draw on evidence from published literature; and on the insights and first-hand experiences of vaccination experts who work on the ground as part of Save the Children's Emergency Health Unit (EHU) to deliver urgent vaccinations to children in conflict-affected zones [see **Appendix: Report methodology for information on the work of Save the Children's EHU**]. Save the Children team member perspectives are described in **Boxes 2-4**.

Strengthening our understanding of where the children are and what they need

Counting and tracking children

Efforts to identify, count and track those living in conflict or displaced by conflict, particularly those in urban or informal communities, need to be intensified ^[65]. Improving the design of censuses and surveys to include refugees can help to understand who and where refugees are, where they come from and how long they have been there. Micro censuses conducted in specific areas in conflict such as urban slums can be an effective way to list all children by household and vaccination status. In Yemen, although it has not been possible to conduct micro censuses that count every child, health workers have relied on information gathered from successive door-to-door immunisation outreach rounds and campaigns to gather information and develop immunisation plans ^[65]. Patient controlled simple electronic medical records can be used to track vaccination status even for children who are on the move ^[67].

The use of high-resolution satellite imagery could provide important information about children affected by conflict to guide vaccine delivery, including estimations of the target population and movement patterns ^[76], ^[14], ^[65]. Such technologies have been successfully used in understanding settlements missing from census maps and estimating population sizes in densely populated areas such as urban settings. In Nigeria, satellite imagery has been used to understand communities living in areas inaccessible to polio vaccination workers ^[14], ^[65].

Surveillance and Early Warning Systems

Surveillance and early warning systems to detect outbreaks of vaccine-preventable diseases are needed to enable rapid responses to curb the spread of disease ^[76]. Many different initiatives are in place to support and strengthen surveillance and early warning systems. For example, WHO's Early Warning, Alert and Response System (EWARS) is designed to improve disease outbreak detection in emergency settings including countries in conflict ^[83]. 'EWARS in a box' contains all the basic equipment needed to establish surveillance in insecure or hard-to-reach settings without reliable internet or electricity. EWARS can be used by local health workers where national disease surveillance systems have been disrupted. It has been implemented with success in conflict-affected countries such as Nigeria and South Sudan. Another initiative is the WHO outbreak toolkit, which will provide key guidance on epidemiological analysis and support countries with their weekly Integrated Disease Surveillance and Response (IDSR) reporting. Greater successes could be achieved in surveillance and early warning systems if sufficient and effective coordination is in place to ensure all actors use the same systems; and if humanitarian organisations operating within

conflict-affected contexts make it a priority to ensure they are reporting the right information via agreed pathways.

Scaling up investment in predicting and preparing for conflict

Preparedness planning

Conflict and instability can be looming for some months before intense violence breaks out. Being prepared for such emergencies in high-risk countries can help to lessen poor disease outcomes when a conflict occurs. Experiences from past epidemics can point the way to improved future preparedness. For example, analysis of Yemen's major cholera epidemic in 2016-2018 shows that Yemen was not sufficiently ready with a cholera preparedness and response plan despite early risk factors including degradation of the water infrastructure and with half the population in need of water and sanitation assistance ^[38]. For future potential outbreaks, the authors recommend context-specific preparedness strategies where donors prioritise and finance preparedness planning for conflict settings; proactive planning for the preventative use of the oral cholera vaccine before an outbreak declaration; and greater coordination between partners and community organisations and networks to ensure responses can reach inaccessible children at risk **[see Save the Children's perspective in Box 2]**.

"South Sudan, Somalia and Yemen [are similar cases]. Each country has a cholera preparedness plan. We should have revised it and included oral cholera vaccine. We only wake up when there is a cholera outbreak....we always try to introduce it once the outbreak starts"

Anonymous study participant ^[38]

Vaccine stockpiling

The International Coordinating Group (ICG) on Vaccine Provision works to forecast vaccine stocks and provide access to vaccines for meningitis, yellow fever and cholera ^[84]. In 2013, WHO established a global stockpile of oral cholera vaccines, funded by Gavi ^[40]. The stockpile is intended to provide rapid distribution of the cholera vaccine in outbreaks. A cholera vaccination campaign in an Iraq refugee camp in 2015 which utilised the global vaccine stockpile highlights the critical importance of this stockpile in facilitating rapid outbreak response during conflict and preventing child deaths ^[85]. The short time which passed between cholera detection, request for the cholera vaccine from the stockpile, vaccine deployment and campaign implementation was considered a success. However, communities outside the refugee camps were not targeted in the campaign despite high need because the global vaccine supply was limited. Insufficient global stockpile of the oral cholera vaccine has been a major concern. Steps have been taken to increase the number of cholera vaccine doses provided through the global stockpile and this needs to be maintained ^[86].

A recent rise in yellow fever outbreaks has highlighted a global shortage in the supply of yellow fever vaccine ^[86]. These shortages meant that the DRC had to resort to fractional dosing to curb its 2016 outbreak of yellow fever **[see Save the Children's perspectives in Box 3]**. It is imperative that the supply of global vaccine stockpiles can match the demand created by outbreaks in conflict through sufficient funding and preparedness planning in manufacturing.



Cool boxes containing Yellow Fever Vaccine wait to be collected from a distribution point and taken to Vaccination sites across DRC.

Photo: Tommy Trenchard/Save the Children

Staying secure and harnessing opportunities for negotiated access

In conflict settings, regular security assessments are central to planning and the safe implementation of vaccination campaigns ^[14]. Security assessments will determine the need and opportunities for negotiating access to conflict areas. Negotiated access can be key to delivering vaccines to children behind frontlines or in hard-to-reach areas. In Somalia, insurgent non-state actors have allowed indirect access to populations by trusted organisations for the purposes of providing child immunisations ^[14]. In Afghanistan, the International Red Cross played the intermediary between the Afghanistan Ministry of Public Health and the Taliban to increase the access of vaccination teams to children living in Taliban strongholds ^[68] **[see Save the Children's perspective in Box 4].**

In some conflict settings, pauses in violence or 'Days of Tranquillity' – whether negotiated or spontaneous - can provide important opportunities for reaching vulnerable children with immunisations and helping them to survive war. In the early stages of the COVID-19 pandemic, UN Secretary-General António Guterres appealed for 'an immediate global ceasefire in all corners of the world' in order to limit the spread of the virus while allowing critical aid to reach the most vulnerable populations. As the pandemic continues to spread, this call has grown more urgent and has attracted the endorsement of 180 governments, yet no ceasefire agreement has been implemented.

Negotiated ceasefires have been used successfully for polio vaccination and surveillance in several conflict settings such as Angola, the DRC, Pakistan, Somalia and Yemen ^[64], ^[14], ^[79]. This approach requires rapid organisation and deployment of resources needed to access children within a short period. Organisations such as the Centre of Competence on Humanitarian Negotiations can provide humanitarian actors with the training and skills to navigate spaces for compromise in conflict settings ^[87].

"The success of this vaccination campaign shows what we can collectively achieve for children and families in Yemen when the fighting stops and humanitarian access opens up"

Henriette Fore, Executive Director, UNICEF ^[79]

The participation of rebel or insurgent groups in vaccination campaigns has also proved a success factor for accessing children in need: in Somalia, Peru and Afghanistan, such groups transported vaccines and provided security. In the DRC, rebel groups provided safe passage for vaccination teams and became involved in surveillance activities ^[88]. Polio vaccination campaigns have been successful in areas of armed conflict because of their focus on the immunisation of children and the negotiation, transparency and neutrality used by campaign teams to gain the trust of warring parties.

As protracted discussions of a global ceasefire continue, driven by the adoption of Security Council Resolution 2532 on an immediate 'humanitarian pause for at least 90 consecutive days', children's health and prospect remain at risk. The international community must urgently place children at the centre of discussions as it works to establish a global ceasefire by the end of 2020.

Investing in meaningful partnerships and engagement with communities and civil society organisations

Community-led responses

Community engagement is another key element of successful vaccination delivery in conflict settings. Engaging with local community members, including traditional and religious leaders, can help to understand community needs, encourage community buy-in and secure access to children ^[33], ^[14]. In Afghanistan, “mobile mullahs” have been recruited by vaccination teams to visit families who refuse vaccinations in order to convince them that Islam is not against vaccination ^[89]. In Bangladesh, influential Rohingya leaders were brought into early stages of planning vaccination activities to ensure local ownership and strengthen acceptance amongst refugees ^[90]. Recruiting community mobilisers and training local community members as vaccinators, including female volunteers, to reach displaced children can be an important element of vaccination campaigns in conflict.

MSF and The Alliance for International Medical Action recently proposed that instead of the international community delivering targeted aid only for Ebola in the DRC, resources should instead be used to strengthen local infrastructure and develop community health systems capable of responding to future outbreaks through community-led responses ^[91].

Mobilising community demand

Proactive strategies which create demand for vaccinations are an important component of immunisation campaigns – they increase awareness of the benefits and ensure communities understand their right to vaccinations and to health. In parts of Nigeria, for example, demand for vaccines is missing because women – typically responsible for seeking healthcare for their children – may lack the knowledge and education to understand that immunisations protect children ^[47]. In a mass oral cholera vaccination campaign in South Sudan in 2014, there was lower participation from men who believed vaccination was solely for women and children ^[29].

“I would walk 20 kilometres if you told me that you were going to give me a shot, my children a shot, some deworming, an antiseptic cream, basic health care, maybe some family planning — something else in addition that can actually help the whole family. But not for two drops of water that I don’t know what they do because I’ve never seen it before.”

Soraya Narfeldt, CEO, RA International - providing services in remote areas of Africa ^[92]

To respond to outbreaks of polio in insecure regions of Cameroon in 2017-2018, advocacy and social mobilisation teams carried out a number of activities to ensure communities understood the importance of the vaccination campaign. Activities included: closed meetings with administrative authorities and community leaders; briefing of media houses; radio and television interviews; dissemination of messages in churches and mosques; and door-to-door sensitisation ^[32]. To reach internally displaced people who had been dispersed, many seeking refuge in nearby bushes, additional mobilisers were recruited from among those displaced who were tasked with assembling children for vaccination at cocoa ovens close to the villages.

The Strategic Advisory Group of Experts on Immunisation (SAGE), a group of independent experts advising WHO on immunisations, undertook an analysis of organisations working on vaccine hesitancy. It found that while many organisations, including UN agencies, governments, academic institutions and philanthropic foundations, state that they will “work to promote the use and acceptance of vaccines among both the public and health professionals,” most of the work has been done on addressing vaccine supply side issues such as vaccine production or health systems strengthening to the inattention of mobilising demand ^[93]. NGO partners could offer significant insights into intensive social mobilisation during vaccine campaigns.

The power of civil society partnerships

Governments and other partners need to engage effectively with civil society health providers in order to improve coordination, quality, reporting and access to children in need ^[63]. With broad community reach, civil society organisations play a critical role in serving children living in inaccessible locations or those displaced within countries and across borders [see **Save the Children's perspectives in Boxes 2-4**].

The maintenance of Yemen's immunisation coverage has been in part due to combined efforts of NGO partners in coordination with WHO and the emergency Health Cluster and the establishment of a functional immunisation Operational Control Room at central and local levels ^[90]. The Syria Immunisation Group, coordinated by WHO staff, brings together humanitarian actors within Syria and in neighbouring countries to provide access to vaccinations across frontlines and borders ^[91].

Courageous healthcare workers

The dedication of healthcare workers and community volunteers and their relentless efforts to reach children in conflict zones has been a key success factor in many immunisation campaigns. Heroic efforts of healthcare workers have been particularly highlighted in war-torn Yemen and Syria, where workers have crossed frontlines and harsh terrain to vaccinate children cut off by violence ^[96], ^[75], ^[94], ^[95]. The Syria Immunisation Group consists of health workers who risk their lives to bring vaccines to children in besieged areas ^[95].

"These courageous health workers take boats when bridges are destroyed. They walk through farmland carrying coolers of vaccines. They provide vaccinations to communities while bombs fall nearby. They brave tremendous danger to protect children from deadly diseases"

World Health Organisation Europe ^[95]

Emmanuel, a Save the Children staff member, helps distribute Yellow Fever vaccination supplies to various vaccination points across Kinshasa.

Photo: Tommy Trenchard / Save the Children



Promoting the integration of immunisation programmes with other humanitarian activities

Coordinating vaccination delivery with other humanitarian assistance is an important way to improve immunisation coverage. Across many settings, closely coordinating the delivery of food, clothing and other medicines alongside vaccination programmes has helped improve the reach and uptake of vaccinations ^[14]. A polio vaccination campaign in Pakistan found that the provision of polio vaccines as part of a broader package of health services was an effective way to engage local communities – community mobilisation activities focused on promoting holistic maternal and child health without the singular focus on polio vaccination ^[33].

Integrating vaccination programmes with other primary healthcare services can also help to strengthen health systems. When functioning well, routine immunisation services bring families into contact with the healthcare system up to five times during the first year of life. These are important contacts for delivering other non-vaccine services such as antenatal care, family planning and nutrition. A study in South Sudan evaluated the effectiveness of integrating immunisation services with already established nutrition programmes ^[97]. It found that the number of children immunised was much higher amongst those who attended nutrition centres than those who attended general primary healthcare centres. Vaccination policies at national and global levels need to be nutrition-sensitive and promote the integration of vaccines into nutrition programmes; similarly, nutrition policies need to support the delivery of vaccines for preventable diseases.

Capitalising on existing trained vaccination workers and permanent vaccination teams may be an important way of integrating other basic health activities. In Nigeria, polio vaccination workers and community mobilisers are being utilised to support other vaccination campaigns and educate communities on basic hygiene, antenatal care, malaria prevention and immunisation in general ^[98].

Maintaining flexibility and agility

Flexible age and dosing

Prioritising flexibility around age for receiving vaccines is a key strategy for preventing outbreaks amongst children born into or affected by conflict ^[14], ^[65]. Providing vaccinations during the second year of life and beyond, including school-age children – not only for vaccinations scheduled beyond 12 months but for ‘catch-up’ doses of vaccinations that may have been missed in infancy – are essential for increasing coverage rates amongst children affected by conflict ^[65].

Measles vaccination campaigns highlight the importance of flexibility around age. Measles doses are routinely provided in the first year of life; but in protracted conflict, vaccination services may have been compromised for many years and older children may have missed out. A significant proportion of measles outbreaks occur in older children. Many campaigns have concluded that the age range for measles campaigns should extend to 15 years, with vaccination of children older than 15 years considered in specific contexts based on risk. Limited vaccine supplies, extreme insecurity and health worker shortages can limit the target age range for vaccinations – but the best approach to prevent disease is to ensure opportunities for ‘catch-up’ measles doses for all children **[see Save the Children’s perspectives in Box 4]**.

In the face of vaccine supply shortages, the use of fractional dose vaccines may be important. Global shortages of the yellow fever vaccine meant that a fractional dose (one fifth) of the vaccine in children aged two years and older needed to be used in the DRC outbreak, as advised by WHO, even though the duration of immunity was unknown ^[29]. Since the campaign in 2016, there have not been any reported episodes of yellow fever **[see Save the Children’s perspectives in Box 3]**.

SAGE advocates for ‘strategies such as mass vaccination campaigns, expanded target age groups, and reduced courses’ to rapidly increase herd immunity and decrease vaccine-preventable deaths and disease in the event of an outbreak in emergency ^[41].

Dynamic outbreak campaign processes and flexibility with vaccination sites

The Save the Children perspectives in **Box 3** highlight the importance of flexibility to adjust vaccination campaigns as they progress and the role of dynamic monitoring and learning processes in impacting overall campaign outcomes.

Flexible vaccination sites can help reach every last child with immunisations in conflict [see **Save the Children’s perspective in Box 4**]. Barrier vaccination zones involve the setting up of vaccination posts around areas inaccessible to vaccinators because of insecurity ^[14]. Barrier vaccination zones can help limit the spread of vaccine-preventable diseases from insecure areas as well as improve child immunity in the communities living or hiding in those areas.

Religious institutions including mosques, churches and temples, or places of traditional or cultural gathering can be useful access points for populations cut off from other sites of vaccine delivery in conflict settings ^[14]. Searching for opportunities to vaccinate those who are fleeing conflict, whilst immensely challenging, requires creativity and agility – transit points such as bus stops and parking lots have been used in some contexts. There is some debate as to whether vaccinations at border crossings are needed unless there are current outbreaks in the host or transit country where refugees can then be included in outbreak campaigns ^[14], ^[54].

Re-establishing routine immunisations

It is well recognised that while vaccination campaigns are essential to rapidly control disease outbreaks and protect large numbers of people quickly, routine immunisations are necessary to restore and maintain acceptable levels of vaccination coverage and ensure long-standing immunity. Vaccination campaigns ideally are used to complement and strengthen, rather than substitute, longer-term investments in routine immunisations as part of strong primary healthcare delivery ^[86]. Gavi argues that overreliance on mass immunisation campaigns draws health workers away from routine services and rebuilding strong healthcare systems. Hence, measles vaccine coverage has not increased since 2015; and yellow fever coverage has stagnated at below 2009 levels ^[27]. Frequent vaccine-preventable disease outbreaks signify ongoing weaknesses or non-functional routine immunisation programmes.

Where routine immunisations have failed because of insecurity, reduced access and poor infrastructure, the implementation of repeated rounds of integrated mass immunisations could maintain adequate coverage while at the same delivering other preventive interventions ^[64]. Yemen’s immunisation coverage is an exception to most conflict settings – due to a series of periodic intensive immunisation activities, including integrated outreach rounds conducted up to five times a year, vaccination campaigns and mobile team visits, the country has managed to keep their vaccination coverage relatively stable (sustained at 70 per cent) ^[65]. However, protracted conflicts also need to work towards longer-term strategies in basic immunisation provision. UN agencies and NGO partners play a key role in this in situations where the national government is unable or unwilling to provide assistance to children living in or displaced by conflict.

BOX 2 | Save the Children perspective – The Water, Sanitation and Hygiene expert: oral cholera vaccination campaign for Rohingya refugees, 2017

In late 2017, a military offensive forced 623,000 people, most of them Rohingya Muslims, to flee Rakhine State in Myanmar into the Cox's Bazar District of Bangladesh. As a persecuted minority population in Myanmar, many Rohingya children would not have received routine immunisations. Recognising the potential threat of vaccine-preventable diseases due to low immunity and poor living conditions in transit and in the refugee camps, the Government of Bangladesh began to work with humanitarian agencies to improve vaccination rates among the Rohingya. A mass oral cholera vaccination campaign, financed by Gavi through the global stockpile, was undertaken in late 2017.

Save the Children's Water, Sanitation and Hygiene expert for the cholera outbreak response had this to say:

What for you were the key success factors?

The campaign was all about preparedness and prevention. The government and humanitarian partners understood that the monsoon season was approaching and that we would end up with a lot of casualties if we didn't implement the campaign now. Cholera was already endemic in Bangladesh. There had been a lot of cases of acute watery diarrhoea being reported in the health facilities amongst children because the refugees had just arrived - sanitation and water was poor. WHO had already prepositioned the vaccine. The team already had the capacity to respond. It was easy for us to deliver it fast in the camp with resources already available. The partnership and coordination aspects of the team through UNICEF and WHO were key. We went further to organise centres for treatment in case cholera struck the camps. Because of the prevention, the outbreak actually never happened. No cases of cholera were reported at that time or in the following year.

I was to support on issues related to waste management. When mass vaccination campaigns happen, a huge amount of medical waste is created. The waste is particularly infectious, especially when dealing with cholera or measles. Handling waste is a major part of our responsibility. We needed to ensure it was properly disposed of outside the health centres in secure locations that nobody could access. We feared that if this cholera got back into the rivers it would cause more harm. People focus on the numbers who are being treated and vaccinated and don't really think about the by-products or the ripple effects that mass vaccinations create. People are not really concerned how many needles have been used or what quantity of water has been used. They often ignore this. We played a big role in ensuring that the campaign was quality and there was no accidental exposure between the medical teams and the people who were coming to be vaccinated.

What were the key challenges?

The sprawling camps made conducting the campaign very challenging. We couldn't work past 4pm in the camps as it became dark. We couldn't start until after 9.30am in the camps because we sometimes had to walk between 9-12 kilometres to reach people and the health facilities. It was terrible topography, the climate was hot and fatigue was very high. The majority of us were staying in Cox's Bazar about two hours away from the camps. There was fear of car accidents.

The Bangladeshi host communities had issues with vaccines being given to refugees and not to them. Engaging with the host communities was vital. There were some moments where the host communities were very angry, asking "Why not us also? We are the people hosting these people". There was rivalry and unrest and a feeling that we should also include them in the campaign. But the camp was the main target in the beginning.

There were also challenges of people resisting vaccines because of culture or lack of knowledge – some of these issues were very new to them. Some feared what we were trying to do and were suspicious of things coming out of the government. The mosques played a big role in helping people to understand the importance of vaccines. Even so, there was resistance amongst a small number of people.

How do you think every last child affected by conflict can be reached with vital immunisations?

The first priority is the prevention aspect in conflict. This will save a lot of costs and lives compared to responding to a disease itself. Donors need to be willing to support preparedness in conflict and vaccination as a key priority to prevent the spread of diseases rather than waiting for them to occur. Disease outbreaks can affect the whole nation and eventually break national borders and become an international problem. But generally, campaigns are about responding and mopping up. Prevention is more important than actually fighting the disease itself. Through prevention, the ripple effect is broken down and people can go about their normal lives knowing that we have already done a proper prevention campaign.

BOX 3 | Save the Children perspective – The Clinical Lead: yellow fever vaccination campaign in the DRC, 2016

In 2016, the DRC experienced the largest yellow fever outbreak in the region for the last 30 years. The outbreak was linked with a massive epidemic which tore through Angola in 2015. Save the Children was a key partner amongst other agencies in a mass vaccination campaign. In May 2016, Save the Children was deployed to support a reactive yellow fever campaign in the health zone of Goma where an active outbreak was present. In August, Save the Children supported a second campaign which aimed at the prevention of yellow fever throughout Kinshasa, a mega-city of more than 10 million people.

More than 20 million doses of yellow fever vaccine were used, exhausting the global stockpile several times. Global shortages of the vaccine saw the use of fractionalised dosing employed. The full dose was given in areas where an outbreak was present; and for all children under two years and all pregnant women. The fractionalised dose (one-fifth of the full dose) was given in preventive campaign areas for children more than two years old. Ongoing monitoring of the outcomes of the campaign has shown that the fractional dose appears to be as effective as the full dose.

Save the Children played a critical role supporting the Ministry of Health in ensuring the availability and quality of vaccines; providing technical support to health staff; waste management; and monitoring and reporting of campaign activities. The team established a comprehensive and innovative set of dynamic monitoring and evaluation activities including exit interviews at vaccination sites, focus group discussions and real-time surveys, which helped to improve coverage, quality and community satisfaction as the campaign progressed.

Save the Children's Clinical Lead of the yellow fever outbreak response had this to say:

What for you were the key success factors?

We put in place a system of real-time monitoring of the campaign. We had a team delivering the services – the immunisations - and another team which was only mandated with ensuring that everyone was getting immunised. There was a site where the children and people came to get the vaccines; and another team going around the community doing focus group discussions and questioning how many people have been immunised? How did it go? Were they happy with the services? What do they think needed to change? With real-time monitoring, we were able to reach roughly 98 per cent in the community. The rate was high and it made us happy that we managed to mobilise people and enable acceptance of the campaign.

We asked ourselves, should we support this strategy of fractional dosing, is it ethical? But we went for it and we are very happy that we have been successful in stopping that outbreak and helping the long-term impacts of keeping the children out of risk of developing the disease. To be part of the intervention that stops the outbreak which is very serious and fatal - with that you feel that you are participating in saving the lives of children and their families.

What were the key challenges?

I remember the first round was only targeting the health zone and there were some security incidents where people were wanting to get the vaccine but were not eligible to receive it. Community acceptance for yellow fever is not a problem. People were very eager to get immunised – it is completely different to Ebola where there is stigma. The outbreak started in Angola and the people in DRC panicked. Everyone wanted to get immunised. The preventive round of the campaign was so important.

Other challenges in the first round were more logistical. We had to manoeuvre to get our feet in that area where Save the Children doesn't have regular activities. You have to work well with other stakeholders to ensure quality of the intervention. You work in an environment where you are working with the Ministry of Health. The challenge is also to ensure that you match each organisations' expectations. This kind of interaction brings challenges but we always overcome them through good communication and diplomacy. You need this to get good access to children.

How do you think every last child affected by conflict can be reached with vital immunisations?

The big challenge is getting funding. Actually, the funding isn't easy. There can be some needs which are well identified but the level of funding is not up to the level of need. Gap funding is a big issue. It may happen that the issue you want to tackle is not of interest for international donors. That puts you in the situation where you have to deal with what you have on your hands with your general funds which is always limited. At some point you need extra funding and if the issue that is happening does not meet the interests of institutional funding, then you don't get their money.

Let's talk about cholera. DRC is a cholera endemic country. You don't really get much interest from big donors to fund it. It is the business of the Ministry of Health to solve in partnership with NGOs. Ebola can spread in two weeks. Yellow fever can infect mosquitoes wherever and start an outbreak outside the borders of the continent. These issues of international concern easily get the interest of donors. When it is threatening the international community, they come down to see what you need. Gavi and others should do more in tackling these vaccine-preventable diseases of lesser international concern.

We as an EHU, we cannot really fix the routine immunisations. But we can be more prepared and more active in responding to outbreaks and we can empower countries in strengthening routine immunisations. We can work with officials to ensure children are getting immunised properly. But all this requires good funding. The more we get money, the more effective we can be.

BOX 4 | Save the Children perspective – The Medical Logistician: measles campaigns, South Sudan, 2019

South Sudan is grappling with one of the world's longest protracted conflicts. At the end of 2018, a measles outbreak was reported in Abyei, a disputed zone between South Sudan and Sudan. Last estimates put the vaccination coverage for measles at 46 per cent. Save the Children joined a mass measles vaccination campaign in Abyei in January 2019. The target age of the campaign was children under five years. Save the Children's Operational Lead for the vaccination campaign advocated strongly before, during and after the campaign to include children from five to 15 years – an age group which made up 12 per cent of reported measles cases and have likely missed out on routine immunisations – arguing that a reduced age target would lead to further outbreaks in the country. However, shortages of vaccines meant that the decision was made at the national level to reduce the target age range.

The Abyei security situation is volatile, with UN special forces controlling some areas where negotiated access is needed. The UN needed to accompany the vaccination team into higher-risk areas which limited the amount of time available for community mobilisation to encourage vaccine up-take. Some areas remained completely inaccessible to vaccination teams. Geography also posed challenges – charter planes are required to access many parts of South Sudan, including Abyei. Despite the security and logistical barriers, the campaign reached 88 per cent of the accessible target population and was generally deemed successful.

However, within months of the Abyei campaign, measles outbreaks had been confirmed in seven counties including Abyei. Save the Children's EHU was involved in another measles vaccination campaign in Mayom in March 2019. Mayom is a nomadic community on the frontline of an active and protracted conflict where many communities live in rebel strongholds. Save the Children needed to negotiate with the Government of South Sudan to allow operation capability in Mayom – the government was suspicious as to why the organisation would be supporting people in opposition territory. It is also an area only accessible by charter plane; dirt roads are often blocked to rebel controlled areas; river crossings have been blown up in warfare creating further impasses; and basic commodities and services to support the needs of children including food, clean water, decent housing, teachers and schools are in scarce supply.

Save the Children's Medical Logistician for the Mayom measles outbreak response had this to say:

What for you were the key success factors?

Negotiating with the rebels was a key success factor in the campaign. The Mayom communities were very open to being vaccinated and highly appreciative of the services. Accessing all areas deep into the county was very important to the communities to reach all children. The campaign was so well received, that in the last two or three days of the campaign, word got around and people from neighbouring counties started coming to receive vaccines. We were flexible in using a number of fixed and mobile vaccination sites to reach communities, including water camps where they store animals and commodities. We achieved more than 95 per cent immunisation coverage – we were very happy at the end because we managed to achieve herd immunity and brought the health of children to a higher level.

What were the key challenges?

The topography of Mayom was a huge challenge. Most centres were between 40-120km apart and most sites didn't have cold chain management facilities. To maintain a cold chain without good water and ice supply isn't easy. Travelling was dusty and windy. At the end of the day you cannot even be recognised because you have dust all over your body from head to toe. We had two or three times where there was dust all over and the plane carrying cash for the programme couldn't land and had to go back to Juba. We couldn't pay the local staff during the campaign but we managed to keep going and pay them at the end.

If at any point there was a rebel attack, it was a huge challenge. Most of the time the rebels were practicing near where we were staying. They were ready for combat any time. Once or twice we saw them rushing towards the frontline. We were almost all the time awake in case we needed to move and rush out of the area. Earlier in South Sudan, a cholera vaccination campaign we were planning had to be aborted. We were in a frontline, a prison camp deep in the bush. We managed to get the supplies and the team in there. In the evening, we heard that the rebels were in range in the county and that one of the targets was the Save the Children compound. We received a call that the rebels were coming through our area around 3am. We had to mobilise quickly and get out of the area. We were airlifted to Juba. This wasn't successful – we left it. The Save the Children local staff already had the training so they courageously carried out the campaign after a few days, minus the international staff.

How do you think every last child affected by conflict can be reached with vital immunisations?

The guidelines are clear on reaching a wider age range for measles immunisations beyond five years of age. It is short-sighted not to expand the age range to include children up to 15 years.

Responding to outbreaks and supporting immunisations in conflict zones requires flexible and discretionary funding that can be released immediately to kick-start activities. Resources are needed for mop-up campaigns to reach more children you cannot access the first time because of insecurity.

We would like to see better preparedness for outbreaks, especially prepositioning vaccines in the right locations. If vaccines are in Geneva or Dubai, how fast can they be moved to the outbreak site in, for example, South Sudan? We need to expand the cold chain to support storage of enough vaccines in regional depots to handle any outbreaks and any gaps, anywhere, anytime. Then it becomes easy for NGOs to respond quickly.

Building better health information systems and surveillance systems is urgent to support the matching of vaccination needs and coverage against vaccine supply. It's a huge challenge to have accurate data when you are doing a campaign – mostly it is guess-work.

When you have a complex situation of conflict and epidemics, the local community will be the ones who will be the first responders. We need to reinforce the integrated community case management where you empower the local volunteers to be the first ones to be called in to support the vaccination campaigns. There isn't a need to reinvent the wheel - how can the local community be empowered to support things like the cold chain and have a minimum package of support? This also reinforces the health information system because you are using the local community to give you the information.

Lastly, we should enhance support for research on vaccination implementation and new technologies. How do you manage to bypass cold chain bottlenecks? Can drones be used to deliver vaccines to hidden children?



Global action needed to reach every last child

The year 2020 is critical for determining the outlook of the global immunisation landscape and ensuring that every unimmunised (zero-dose) and underimmunised child is reached with vaccinations. The global immunisation vision for the next decade is being constructed; with Gavi, the Vaccine Alliance, having exceeded its third replenishment target with a record US\$8.8 billion funding for its next five-year strategy, there is a strong foundation to build upon. While national governments have the primary responsibility to deliver essential health services, including immunisation, to their populations, the global immunisation agenda and Gavi's work are vital to support countries to ensure that all children are reached with effective and affordable life-saving vaccines. These immunisation agendas need to connect with and strengthen other current initiatives which seek to support the health and protection of children affected by conflict, for example, the Global Compact on Refugees and the High-Level Panel on Internal Displacement. Civil society organisations are supporting intensified efforts to immunise every last child affected by conflict. Initiatives such as the Humanitarian Mechanism are supporting the timely and affordable supply of vaccines for these organisations.

These important initiatives offer significant contributions to achieving the Sustainable Development Goals (SDGs), particularly SDG 3 which aims to 'ensure healthy lives and promote wellbeing for all at all ages', and the specific target to achieve UHC through equitable, affordable and accessible medicines and vaccines ^[99]. They are also imperative to deliver on the Call to Action to accelerate progress towards UHC for people affected by armed conflicts, fragile settings, health and other emergencies, of which Gavi is a co-signatory ^[100].

Agendas focused on immunisations

Global Vaccine Action Plan 2011-2020 to Immunisation Agenda 2030

The new plan – *Immunisation Agenda 2030: a global strategy to leave no-one behind* – was formally endorsed by Member States at the 73rd World Health Assembly in September 2020 ^[101]. The new agenda recognises that progress to reach all children with immunisations will require tailored approaches to meet the needs of different contexts; and flexibility to respond to emerging challenges such as conflict, displacement and vaccine hesitancy ^[101]. The agenda includes a specific strategic priority on outbreaks and emergencies, with the objective to strengthen capacity to prepare for, prevent and respond to vaccine-preventable disease outbreaks; and ensure that those affected by conflict can receive essential immunisations. In operationalising the agenda, health and humanitarian actors must specifically outline how children who remain hidden on the frontlines of warfare or are displaced across conflict-zones can be prioritised, reached and protected in order to ensure coverage for every last child.

Gavi, the Vaccine Alliance: strategies and policies

Gavi, the Vaccine Alliance, recognises that faster progress is needed to find and immunise children who are missing out on essential vaccinations, especially those in fragile and conflict-affected settings ^[86]. Gavi's unique public-private partnership model continues to be instrumental for improving vaccination coverage for all children. Since its inception in 2000, Gavi has helped immunise over 760 million people against deadly diseases, saving more than 13 million lives ^[102].

Fragility, Emergencies and Refugee Policy

Gavi's Fragility, Emergencies, and Refugee policy came into effect in 2017. The policy allows Gavi to adjust its support and processes to better meet each country's specific needs, working in close collaboration with partners and humanitarian actors. It aims to increase the effectiveness of support towards equitable access to immunisations. The policy defines a methodology to identify a sub-set of countries most affected by fragility; to be more flexible to swiftly respond to special needs in these settings; and to adopt a higher risk appetite for engagement in emergencies and

situations involving conflict and refugees ^[103]. The policy includes a specific note that it will provide vaccine support through non-state actors including civil society organisations in circumstances where national governments may be unable to deliver immunisations to children in need.

Bangladesh was one of the first countries to utilise the policy in late 2017, carrying out Gavi-funded vaccination campaigns for Rohingya refugees in Cox's Bazar ^[104]. The policy has allowed South Sudan to receive more vaccine doses and immunise a wider age range with essential childhood vaccines ^[86]; aided Syria to control outbreaks of polio and measles and strengthen the cold chain and health service delivery ^[27]; and supported the cholera campaign in Yemen by supplying cholera vaccine from the global stockpile. With these success stories, Gavi needs to continue to drive policy implementation with greater flexibility, speed and engagement with civil society organisations working within conflict-affected communities, with particular attention paid to reaching internally displaced children.

2021-2025 Strategy

Since the last Gavi strategy was devised, growing conflict, mass displacement and rapid urbanisation have served to challenge Gavi's efforts to reach every child, as well as pose a threat to global health security ^[86]. The Gavi Board recently approved a new strategy framework to guide the Vaccine Alliance's work over the period 2021-2025. The strategy focuses on equity and prioritises reaching communities who are currently being missed such as those in urban slums, remote areas and conflict settings ^[105]. One of the key principles of Gavi's new strategy is *'Missed communities, first priority: Prioritise children missing out on vaccination including among migrants, displaced and other vulnerable populations'*.

The operationalization of these principles with appropriate and responsive policy and programmes is now critical to implementing new approaches to better support communities and countries in conflict. There is an immediate need for Gavi to deliver on its ambition to prioritise children affected by fragility and conflict; and work with partners, particularly civil society organisations, to test scaled-up and innovative approaches and leverage their experience, expertise and reach in delivering immunisations in these volatile contexts. Internally displaced children or those remaining on the frontlines of conflict are the least protected and should be afforded specific priority.

GAVI replenishment pledging conference 2020

With the COVID-19 pandemic driving renewed global interest in vaccine access, Gavi held its 2020 pledging conference in June, hosted by the UK Government ^[102]. Bringing together donor governments, foundations, corporations and other organisations, the conference raised over US\$8.8 billion; well above its target of US\$7.4 billion. This replenishment is crucial to ensure predictable financing for Gavi's unique institutional model that brings together partners from public and private sectors as well as civil society organisations. Contributions to the replenishment will support plans to immunise an additional 300 million children through the next five-year period. Of the US\$8.8 billion raised, US\$3.6 billion will be invested by developing country governments in their own vaccine programmes, more than doubling the amount invested by these countries in the previous period.

Sustained investment in Gavi's immunisation agenda is needed from developed countries to protect children in conflict-affected countries from vaccine-preventable disease outbreaks and prevent the resurgence of diseases across regions.

The Humanitarian Mechanism

The Humanitarian Mechanism recognises that, although policies and guidance for the implementation of vaccination campaigns in humanitarian emergencies exist (for example, WHO's Vaccination in Acute Humanitarian Emergencies framework ^[28]), there is still a need for a platform which focuses on affordable and timely access to vaccines for entities such as civil society organizations, governments or UN agencies who procure vaccines on behalf of populations facing

humanitarian emergencies; and who otherwise do not have access to affordable vaccines. The Humanitarian Mechanism details elements for effective and fast vaccine procurement in emergencies ^[106]. In particular, the Mechanism has advocated to allow civil society organisations and UN agencies to quickly procure pneumococcal vaccines at a reduced and affordable cost ^[46]. Before the programme was established, the only way to access pneumococcal vaccines at reduced cost was through Gavi. Most civil society organisations implementing vaccination campaigns were not able to buy it because of prohibitive costs, leaving children in many countries – including refugees and displaced children – without access to the vaccine.

The Mechanism has been used by organisations in countries including Nigeria, South Sudan and Syria, but is currently limited to only one vaccine and needs expansion to include other vaccines for use in humanitarian emergencies.

Agendas focused on children affected by conflict

Global Compact for Refugees and Global Refugee Forum

In December 2018, the UN General Assembly affirmed the Global Compact on Refugees. The Compact intends to ease pressures on host countries created by large influxes of refugees; enhance refugee self-reliance; expand access to solutions in other countries; and support the conditions for the safe and dignified return of refugees to their countries of origin ^[107]. Whilst the Compact does include specific reference to immunisation activities, disappointingly, the language is far from sufficient to guarantee refugee children will be adequately supported with essential vaccinations and to mandate stakeholders with this responsibility: *‘Disease prevention, immunization services, and health promotion activities, including participation in physical activity and sport, are encouraged; as are pledges to facilitate affordable and equitable access to adequate quantities of medicines, medical supplies, vaccines, diagnostics, and preventive commodities’* ^[107, p.14, Section 2.3/73]. In December 2019, UNHCR and the Government of Switzerland hosted the first-ever Global Refugee Forum in Geneva. While a key opportunity to ensure that immunisations for children displaced across borders are prioritised in the implementation of the Compact, essential health services and vaccinations were not a topic of priority at the Forum ^[108].

A series of informal briefings will be held before the next Forum in 2023. These present a critical opportunity to stress the inadequacy of global policies and initiatives to support immunisation programmes for children affected by conflict.

High-Level Panel on Internal Displacement

In October 2019, the UN Secretary-General announced the establishment of a new High-Level Panel on Internal Displacement to increase global attention to, and develop durable solutions for, the millions of people affected by internal displacement ^[73]. The Panel held its first meeting in early 2020 ^[109]. This provides another critical opportunity to shape efforts to reach every last child affected by conflict with life-saving immunisations.



At 6 weeks old, Jayden receives his polio vaccine at Lodwar County Hospital, Kenya.

Photo: Nina Raingold/Save the Children

Scaling up action: summary of recommendations

If we are serious about protecting the health of the world's most vulnerable children, the next decade of action necessitates that every last child affected by, or living on the frontlines of conflict, is prioritised and reached with life-saving vaccines. New approaches are needed to reach all children who may have missed out, including and beyond infants. New technologies are needed to count, track and deliver services to locations rendered inaccessible by geography or insecurity. With the promise of new and improved vaccines for major killers of children including malaria and Ebola, we must not lose sight of the many other vaccine-preventable diseases already taking children's lives like measles and polio. Improved strategies will be needed which are fast, flexible, creative and properly funded; and a courageous resolve of organisations and healthcare workers in crossing frontlines to vaccinate children is imperative.

More than technical fixes, the solutions will require collaboration and trust between many actors — from local communities and civil society organisations, to international agencies, national governments, donors and global institutions such as Gavi. Through our collective efforts we can and must do more to stop immunisation rates from plummeting during conflict and to re-establish routine immunisation as quickly as possible.

Immunisation programmes not only save lives during conflict, but they can help to rebuild the health systems that will protect children in the future. Improving access to vaccines for every last child can contribute to building community trust and peaceful and inclusive societies. Reaching every last child with life-saving immunisations is a goal we all must strive towards.

Recommendations for donor governments, Gavi
and humanitarian partners working in conflict settings

1) Sharpen the global focus on children affected by conflict in the development and implementation of global immunisation and refugee/displacement policy agendas, including:

- 1.1 Make immunisations and other essential health services for refugee children a definite and non-negotiable priority in the implementation of the Global Compact for Refugees; and for internally displaced children through the High-Level Panel on Internal Displacement.
- 1.2 Ensure the newly-endorsed Immunisation Agenda 2030 prioritises and delivers for children affected by conflict, including identifying children left behind and building targeted approaches to reaching these children with clear commitments from relevant partners.
- 1.3 Gavi must demonstrate that its Fragility, Emergencies and Refugee Policy and its 2021-2025 Strategy deliver on ambitions to reach missed populations affected by fragility, with prioritisation of children in conflict settings. In particular, Gavi must ensure targeted immunisation campaigns for internally displaced children and those living in urban slums to raise routine immunisation coverage; and strengthen routine immunisations and essential health services to rebuild devastated health systems.

2) Continue to invest in immunisations as part of wider health system investment, and ensure an explicit focus on supporting conflict-affected countries through agile and flexible funding and partnerships, including:

- 2.1 Donors must ensure that their investment in Gavi's 2021-2025 strategy drives a strong policy agenda including progress to "leave no one behind", focusing on access to immunisation services – as part of comprehensive primary health care – for children affected by conflict.
- 2.2 Prioritise flexibility and agility with funding and civil society partnerships to ensure Gavi's Fragility, Emergencies and Refugees Policy is fit for purpose.
- 2.3 Maintain support for innovative partnership platforms such as the Humanitarian Mechanism, to improve access to affordable and timely procurement and supply of vaccines for use in humanitarian contexts.

3) Support conflict-affected countries to deliver on evidence-based operational approaches to increase immunisation coverage, including:

- 3.1 Advocate for the establishment of a global ceasefire, in line with Security Council Resolution 2532 and with an intentional focus on reaching the most vulnerable children with immunisations and other urgent health interventions, by the end of 2020.
- 3.2 Implement and strengthen systems to count and track children affected by conflict, including through investment in rapid expansion of technologies for disease surveillance early warning, and immunisation status tracking.
- 3.3 Support coordination of scaled-up investment in preparedness planning and vaccine stockpiling.
- 3.4 Harness opportunities for negotiated access and enable rapid deployment of resources to access children on the frontlines of conflict.
- 3.5 Build meaningful partnerships and engagement with civil society organisations at local and national levels to capitalise on their community reach and role in serving children in inaccessible or volatile locations.
- 3.6 Promote the integration of immunisation programmes with other humanitarian activities, particularly nutrition, efforts to improve access to safe water and sanitation and other essential health services. Ensure that immunisation policies are nutrition-sensitive and complementary to WASH-practices.
- 3.7 Enable all children in need to receive "catch-up" vaccines by taking an agile, gender-sensitive, culturally appropriate and evidence-based approach to age and dosing requirements.
- 3.8 Invest in dynamic monitoring and evaluation of immunisation campaigns such as focus groups and real-time surveys with beneficiaries at vaccination sites during campaign implementation; and enable flexibility and innovation to readily adapt campaigns to reach more children.
- 3.9 Deliver immunisation campaigns that are targeted to reach zero- and single- dose children and aim to strengthen and generate demand for routine immunisation.

Appendix: Report methodology

This report draws on information and evidence across more than 170 peer-reviewed papers and grey literature such as UN reports, reports from civil society organisations and humanitarian news articles focused on vaccine-preventable diseases and the delivery of immunisations for children affected by conflict.

The desk review was supplemented with qualitative research of a small number of Save the Children's immunisation campaigns for children affected by conflict. This involved analysis of internal documents including post-vaccination campaign monitoring and evaluation reports; and interviews with five staff members who sit within Save the Children's global Emergency Health Unit (EHU). The staff members offered valuable insights of their experiences of delivering vaccination campaigns to children across different conflict contexts and their recommendations to improve future practice to reach more children. Save the Children established the EHU in 2015 to increase the efficiency and effectiveness of the organisation's humanitarian health response and to ensure the provision of life-saving healthcare to children in the most difficult and dangerous places ^[110]. The EHU was established in recognition of new and emerging global challenges such as the changed nature of armed conflict, rapid urbanisation and climate change, and deadly epidemics such as Ebola; and in recognition of the need for better preparedness and faster humanitarian response.

Finally, a brief quantitative analysis of national immunisation coverage in the four of the worst conflict-affected countries to be a child today (Iraq, Syria, Yemen and Nigeria) was calculated based on the most recent WHO/UNICEF Estimates of National Immunization Coverage (WUENIC) ^[2]. This included data on DTP3 and measles first dose coverage, and the DTP1 to DTP3 drop-out rates, spanning 2000 to 2018.

A limitation of the report is that no interviews were conducted with expert stakeholders external to Save the Children such as Gavi, WHO, UNICEF or other civil society organisations who provide immunisations to children affected by conflict

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