Summary of Key Evidence Related to Zero Dose in the Context of Humanitarian or Conflict Settings

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Key Points:

- Two-thirds of zero-dose children live in conflict-affected countries and approximately 1/5 of zero-dose children in Gavi-supported countries live in conflict settings[1].
- The majority of child deaths in conflict settings are due to indirect effects (malnutrition, infectious disease) rather than violence[3, 9].
- Immunization rates can fall precipitously due to conflict[4].
- Even when health and immunization resources are available security within a country is important for maintaining immunization coverage targets[6, 7].
- Sustained investment in building resilience health systems can help achieve immunization recovery in conflict-affected settings[8, 9].

Children living in conflict-affected areas and in humanitarian crises are particularly at risk of missing out on immunization. UNICEF estimates that two-thirds of the world's estimated 13.5 million zero dose children live in settings impacted by conflict.

Although the last 20 years have seen tremendous gains in childhood immunization in lower income countries from 59% in 2000 to 81% in 2019[3], access to immunization still lies out of reach for millions of children and families impacted by conflict and forced migration. Zero dose status, defined as those who have not received the first dose of DTP vaccine (DTP1), has not yet been extensively studied in populations affected by conflict or humanitarian crises. Available evidence finds that armed conflicts can have a profound negative impact on utilization, delivery, resources, and infrastructure for immunization. Failure to deliver and administer vaccines to people in fragile settings, especially communities affected by conflict, threatens progress to eradicate diseases like polio and measles posing a looming threat to global child health.

- The majority of child deaths in fragile settings are due to the indirect effects of conflict (malnutrition and illness), rather than violence.
- Displaced people and refugees are often forced to live in overcrowded settings where malnutrition is common and access to clean drinking water and medical care can be extremely limited.
- Lack of adequate immunization coverage in displaced populations can lead to outbreaks of vaccine preventable diseases (VPDs) that further threaten the lives and livelihood of the most vulnerable, particularly infants and children.
- Vaccine preventable respiratory and gastrointestinal infections are the two leading causes of death during complex humanitarian emergencies.[3]

How Conflict Impacts Immunization Coverage

A 2019 analysis4 of 16 low- and middle-income countries (LMICs) representing a large proportion of displaced and refugee populations aimed to assess the impact of conflict, immunization coverage, and cases of VPD in 2014. United Nations High Commission for Refugees (UNHCR) and the World Health Organization (WHO) databases were matched with Demographic and Health Survey (DHS) data to examine the relationship between conflict and immunization. The countries included in the analysis all received vaccine support from Gavi and contained large numbers of registered as “persons of interest” by the UNHCR referring to refugees and displaced persons.

Though the study population made up only 12% of the global population, it contained 67% of polio cases and nearly 40% of measles cases worldwide from 2010-2015. The global average of full coverage with the diphtheria, tetanus, and pertussis (DTP3) vaccine is 85%, but almost all of the 16 countries studied fell below that average.

Ukraine, South Sudan, Somalia, Chad, Central African Republic, and Nigeria all had average DTP3 coverage levels below 50%. **Researchers suggest these low rates are driven by subnational regions affected by current or historical conflict** after comparing regions with the highest coverage to those with the lowest coverage. Regions with the lowest immunization coverage in Afghanistan, Chad, Ethiopia, and Nigeria all had coverage of 10% or less while regions with the highest coverage in these same countries were above 50%.

Three country specific examples illustrate declines in immunization coverage following initiation of conflict in Ukraine, Yemen, and South Sudan. Ukraine experienced a decline from 76% coverage of DTP3 in 2012-2013 to 23% in 2014 after conflict, and further to 19% in 2015. Following conflict in Yemen, there was a decline in DTP3 coverage from 71-73% in 2013-2014 to 47% in 2015. Finally, after civil war in South Sudan erupted in 2014, DTP3 coverage declined from 75% estimated in 2011 to 46% in 2014.

Effects Of Crises On Vaccine-Providing Health Facilities

The landscape of armed conflict has shifted from between countries to the subnational level, according to the Peace Institute Research Oslo[5]. A recent analysis on the impact of armed conflict in Cameroon6 found that between 2016, when districts were considered secure, and 2019, when nearly all districts were considered highly insecure due to active armed conflicts, geographic immunization equity in the first year of life dropped precipitously. These dramatic declines in immunization coverage for young children were the result of several factors:

- The number of health facilities offering immunization services dramatically declined as the conflict intensified.
- The number of vaccinating health facilities declined over the study period by 30% to 53% in observed districts.
- Attacks and rising insecurity led many healthcare workers to flee or leave their duty stations at immunization facilities.
- A total of 26 health facilities were destroyed and 11 healthcare workers killed in observed regions.

Armed conflict has had a dramatic and negative impact on immunization access, in part due to attacks on health facilities and healthcare workers. Additionally, fighting and violence can make parents fearful or hesitant to take their children for care at health facilities or outreach events, particularly if these resources are being targeted for violence.

The Increasing Impact Of Internal Conflicts

Security within a country is important for reaching immunization coverage targets even when health resources are available.

An analysis of infant immunization coverage in Afghanistan[7] found a statistically significant association between a high level of security within the country and infant immunization, independent of available immunization resources.

During a period of “post-conflict” status in Afghanistan from 2000 to 2003, the number of EPI fixed centers increased from 429 to 722 and the number of vaccinators also increased from 860 to 1,400. Immunization coverage for DTP3 increased in many, but not all, districts during this time period. Resource availability showed no relation to immunization coverage. **The lack of security in a given region played a significant role in the low infant immunization coverage regardless of the availability of immunization services.**

The Increasing Impact Of Internal Conflicts

Of the 79.5 million people displaced globally due to conflict, violence, and persecution, an estimated 40% are children (Save the children). The numbers of displaced children have grown as the scale and scope of wars and conflict have become increasingly complex, including attacks and destruction of civilian infrastructure including healthcare, hospitals, and health workers. We know that despite these immense challenges, progress is possible.

Surveillance, counting, and tracking – More robust data collection and disease surveillance systems can help ensure that immunization resources reach every last child.

Integration of health resources – Integrating immunization services with other primary health and humanitarian services can improve uptake for all services, particularly when health services like immunization and antenatal care are bundled with services prioritized by communities[8].

Outreach activities – People displaced by conflict may live in a variety of settings ranging from camps in neighboring countries to internal displacement to urban or geographically remote areas. Immunization outreach activities should be developed and deployed with flexibility based on the context of the situation and should engage community partners, immunization champions, and civil society organizations (CSO).

Invest in health system resilience – The COVID-19 pandemic has demonstrated the dire need for health systems to develop the capacity to maintain routine services in the face of emerging crises.

"For our sisters and brothers already facing such extreme adversity, the cost of inaction on quality of care is needless human suffering and lives lost. This is a preventable tragedy."

- WHO DIRECTOR-GENERAL
DR TEDROS ADHANOM GHEBREYESUS

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