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Humanitarian Crises, A Roadblock to Global Health Vaccination and Immunisation Initiatives

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ABSTRACT

Background: Humanitarian crises have a significant negative impact on global health initiatives. Humanitarian crises, driven by conflict and natural disasters, result in population displacement, and significantly affect healthcare and routine immunisation services.

Problem: Vaccination and immunisation efforts in crisis-affected areas are hindered by broken logistics and supply chain systems, resulting in delayed deliveries, and weakened health infrastructure. Population displacement leads to overcrowding, and increased transmission of Vaccine-Preventable Diseases (VPDs). The resultant fragile governance limits coordination between government and humanitarian partners, leading to an increase in zero-dose and under-immunised children.

Aim: This article analyses the mechanisms by which humanitarian crises disrupt vaccines supply chains and coverage, using the Cameroon conflict as a case study, and proposes integrated response strategies.

Method: We conducted a narrative review of peer-reviewed and institutional literature published between 2015 and 2025 on vaccination in humanitarian and conflict-affected settings. We complemented this review with a qualitative case study using routine immunisation reports, outbreak investigation summaries, program monitoring data, and stakeholder field experiences from the Northwest and Southwest regions of Cameroon between 2019 and 2025. We synthesized findings thematically, focusing on health system disruptions, supply chain constraints, service delivery barriers, and surveillance breakdowns.

Results: We observe broken health systems from armed conflict, leading to compromised delivery of health commodities, a preponderance in unimmunised and under immunised children in conflict laden areas of the world. The direct result is outbreaks, and increased under-5 morbidity and mortality.

Impact: In Cameroon, VPDs have resurged over the past four years, including poliomyelitis, measles, yellow fever, and neonatal tetanus, especially in the crisis-hit regions, such as the Wabane and Eyumodjock health districts in the Southwest Region. This resurgence is not unique to Cameroon. Other conflict-affected countries report similar findings regarding VPDs. These trends illustrate how insecurity and logistical challenges compromise vaccine delivery and handling, as well as vaccination coverage, thereby threatening immunisation goals.

Conclusion: The interplay between humanitarian crises and immunisation underscores the urgent need to integrate resilience and emergency response into vaccination strategies. Strengthening these systems is critical to improving coverage, protecting vulnerable populations, and advancing progress toward Sustainable Development Goal 3, with vaccination remaining central to health equity.

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Introduction

A humanitarian crisis is an event or series of events that pose a critical threat to the health, safety, security, or well-being of a community or other large group of people, usually over a wide area. Humanitarian crises threaten humanity's very existence and arise from various sources, including natural disasters, political emergencies, and pandemics. Interventions to address humanitarian crises usually come from individual and global partners, with the United Nations High Commission for Refugees (UNHCR) among the foremost, guided by international humanitarian law in all its operations [1].

Humanitarian assistance takes various forms but generally involves a set of actions to provide aid to people in conflict, crises, and disaster-burdened areas to save lives, alleviate suffering, and maintain human dignity during crises and disasters [2]. One critical issue after response and assistance in humanitarian crises is to strengthen preparedness in the event of recurrence of similar emergencies, so that the response will meet the magnitude of such crises [3].

Humanitarian emergencies affect global health and vaccination initiatives and therefore the achievement of the Sustainable Development Goals (SDGs) is compromised. Among other SDGs, the achievement of Goal 3 that proclaims Good Health and Wellbeing to all at all ages is compromised [4].

History of Humanitarian Emergencies

There is no universal agreement as regards the exact debut of humanitarian emergencies. Anderson, Becknell, & Taliano. trace back humanitarian emergencies to 1859 in the period in the Italian City of Solferino at the end of the bloody war between the French and Austrian Armies. Shortly after the bloody battle, the Red Cross and Red Crescent movement was founded in 1863 to cater and provide relief for the wounded in war times. The movement has spread its tentacles to many countries and has expanded its mission to provide inter alia first aid, prevent accidents, ensure water safety, and maintenance of maternal and child [5].

Global Hotspots of Humanitarian Emergencies, 2025 Picture

The International Rescue Committee (IRC) annually identifies areas with a high propensity of humanitarian crises. For 2025, they pinpointed 10 top crises not to be ignored [6]. Top on the list is Sudan's Civil war which is the largest humanitarian crisis on record with the largest and fastest displacement. This is closely followed by Gaza Occupied Palestinian Territory; conflict in Myanmar; Crisis in Syria; South Sudan conflict; the Israel-Hezbollah conflict in Lebanon; Burkina Faso characterised by sieges and massacre; gang Violence in Haiti; unabating and spreading multi -front conflict in Mali; and the Somali conflict and drought.

IRC recently released the top ten crises not to be ignored in 2026, again with Sudan's Civil War topping the list followed by Occupied Palestinian Territories, South Sudan Crises, Ethiopia at risk of major conflict, gang rules in Haiti, conflict in Myanmar, failed peace agreements in DRC, conflict in Mali, escalating violence in Burkina Faso, and finally the risk of conflict in Lebanon from failed Economy. From these hotspots, we observe that armed conflict is the major driver of humanitarian crises [7-8].

As IRC puts it,
"*We are living in a world out of balance*"
IRC is not the only global actor working to address humanitarian crises. **Concern Worldwide** similarly classifies and ranks the leading global humanitarian crisis areas into the Top 10. For 2025, the spots are ranked in the following order from first to last: Sudan, Syria, Gaza and the Occupied Palestinian Territories, Ukraine, DR Congo, Afghanistan, Yemen, Ethiopia, South Sudan, and Chad. The lists by IRC and Concern Worldwide are similar but not identical. They are equally not exhaustive, leaving out conflict zones they consider not occupying the top ten of global concern. This is the case with the Northwest and Southwest Regions (NWSW) of Cameroon, which have been in conflict since 2016. However, they pinpoint areas of global concern based on the previous year's realities. Each of these humanitarian crises drive people into various humanitarian needs, including food and shelter, which are social determinants of health.

Notably, most of the conflict-prone or conflict-laden locations in both classifications are in Africa, Southeast Asia, and the Middle East. Armed conflict remains the leading driver of all humanitarian crises worldwide, alongside climate change, with civilians at risk from explosive weapons used in populated areas. In the Global Humanitarian Overview, 2025, Tom Fletcher, the Emergency Relief Coordinator for the UN, states:

"*I launch this Global Humanitarian Overview for 2025 —my first as Emergency Relief Coordinator with shame, dread and hope. Shame, because behind every number in this report is a human being*" [9].

The Global Humanitarian Overview 2025 highlights global areas of concern, including those outside the top 10 in the **IRC** and **Concern Worldwide** classification. According to Humanitarian Action (Humanitarian Action, 2024), over 305 million people were in need in December 2024 because of humanitarian crises. They aimed to reach close to 190 million people and required over 47.5 million USD to launch an action, as shown in the map in Figure 1.

Aim and Objectives

The main aim of this article is to underscore the negative impact of humanitarian crises and armed conflicts on global vaccination initiatives.
The specific objectives of the article are:

- Identify the global health effects of armed conflicts and humanitarian crises
- Underscore the disruptions on global vaccination and immunisation caused by armed conflict and humanitarian crises
- Elaborate the impact of humanitarian crisis on vaccine supply chain and health system disruptions in Cameroon's NWSW
- Propose a way forward to limit global conflicts and humanitarian crises

Method

In order to carry out this study, a mixed-methods analysis was employed. This method employed a comprehensive narrative review of global evidence with a qualitative case study of programmatic data and stakeholder experiences from the Northwest and Southwest Regions of Cameroon.

We conducted a narrative review of peer-reviewed and institutional literature published between 2015 and 2025 on vaccination in humanitarian and conflict-affected settings. We complemented this review with a qualitative case study using routine immunisation reports, outbreak investigation summaries, program monitoring data, and stakeholder field experiences from the Northwest and Southwest Regions of Cameroon between 2019 and 2025. We synthesized findings thematically, focusing on health system disruptions, supply chain constraints, service delivery barriers, and surveillance breakdowns.

Study Design

We conducted a qualitative narrative review combined with a descriptive case study of vaccination system performance in conflict-affected regions of Cameroon. This design enabled synthesis of global evidence with context-specific operational experience in fragile settings.

Data Sources

We used two primary data sources:

Literature review: Peer-reviewed articles and institutional reports published between January 2015 and December 2025 that address vaccine delivery, health systems performance, and immunization outcomes in immunisation or conflict-affected contexts.

Cameroon case study: Routine immunisation program reports, outbreak investigation summaries, monitoring and supervision data, and internal program documents from the Cameroon Baptist Convention Health Services (CBCHS) and partner organisations operating in the Northwest and Southwest Regions between 2019 and 2025. We also drew on structured field observations and stakeholder experiences from district-level immunisation managers, logisticians, and frontline service providers engaged in vaccination delivery during this period.

Search Strategy and Selection

For the literature review, we searched PubMed, Google Scholar, and organisational repositories (WHO, UNICEF, Gavi, UNHCR) using combinations of the terms: vaccination, immunisation, humanitarian crisis, armed conflict, fragile settings, zero-dose children, and health systems resilience. We prioritised systematic reviews, empirical studies, and major policy documents relevant to low- and middle-income countries. We excluded opinion pieces without empirical grounding and sources unrelated to vaccination or health system performance.

Data Extraction and Analysis

We extracted data on:

Health system disruptions affecting vaccination

Vaccine supply chain constraints

Service delivery barriers

Surveillance and outbreak response challenges

Adaptive delivery strategies in conflict settings

We conducted thematic synthesis across sources and triangulated findings with evidence from the Cameroon Case Study. We organised results into analytic domains aligned with the immunisation system building blocks: governance and access, service delivery, supply chain and cold chain, health workforce, community engagement, and surveillance.

Ethical Considerations

This study relied on secondary analysis of routine program data and publicly available literature. No individual-level identifiers were used. Institutional permission was obtained from CBCHS for use of program reports and internal documents. No additional ethical approval was required.

Results

From the analysis, we identified the negative consequences of humanitarian crises and armed conflicts on health as a whole, as well as their devastating effects on vaccination and immunisation initiatives. These negative consequences impact on health and well-being, and in turn challenge the achievement of the SDGs. We shall now discuss the health effects of armed conflicts and humanitarian crises, and the negative immunisation consequences.

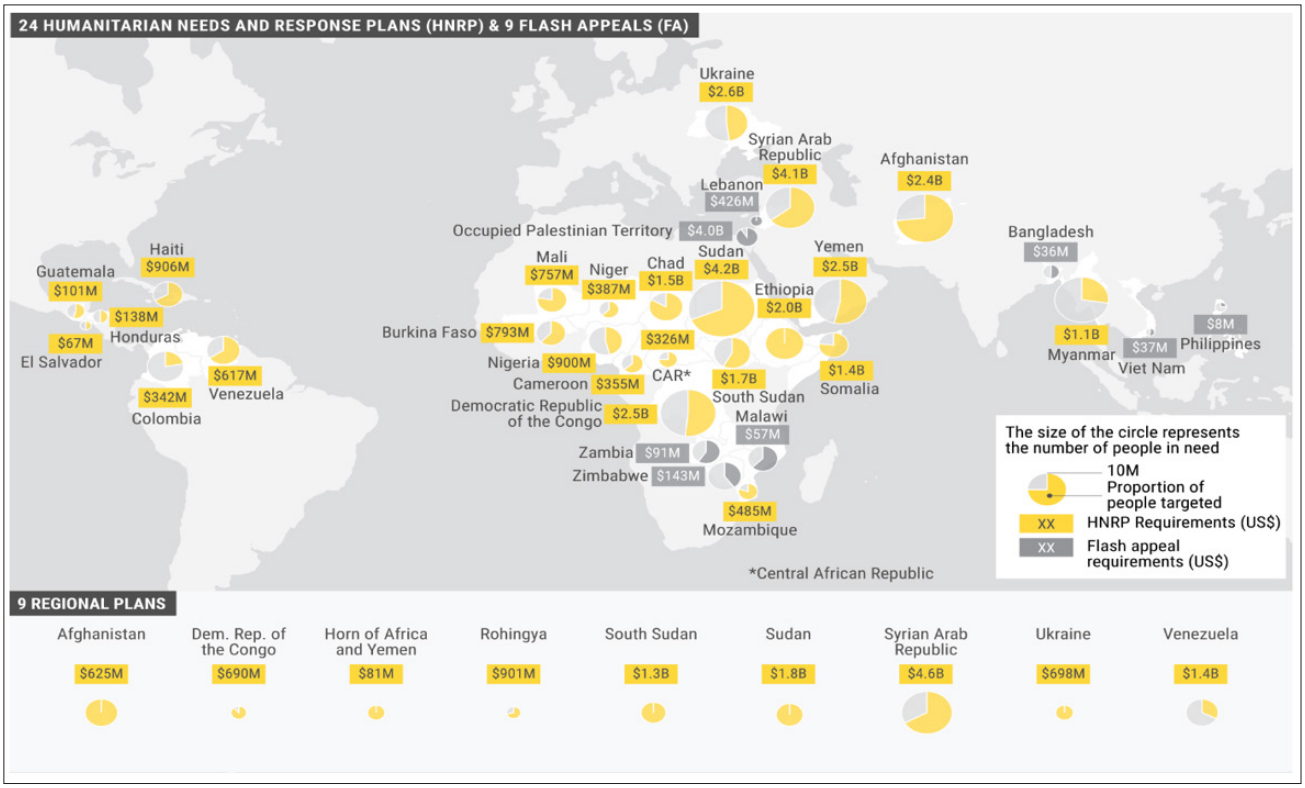

Figure 1: People in need, people targeted and financial requirements in 2025. Source: (Humanitarian Action, 2024)

Health effects of Humanitarian Crises and Armed Conflicts

Health, as precious as it is to human existence, becomes a scarce commodity in a conflict situation. While armed conflict compromises all aspects of the economy, the impact on healthcare is so pronounced. No matter the form of the war or the armed conflict, public health becomes directly threatened [10]. Only the healthy population can be economically productive; thus, compromised health implies a collapsing economy. The manifestation of these health effect of armed conflict is multifaceted, affecting health systems

and disrupting community stability.

Compromised Waste Management and Wastewater Treatment
Firstly, the massive population displacement in a conflict situation undermines the waste management systems in place, exposing the population to infectious disease outbreaks. Both medical and household wastes are affected. There is evidence that the cholera outbreak in North Kivu [11-12] was linked to poor sanitation and hygiene practices among the displaced populations.

Compromised Delivery System
Armed conflict brings about a breakdown of the healthcare delivery system itself, from disruptions in the health commodity supply chain to the destruction of health facilities. Even basic supplies needed for daily operations become scarce in conflict situations. Available supplies are never proportionate to the needs during the crisis, and in some cases, health facilities become either targets or battlefields for the conflicting parties, thus paralysing the movement of health commodities. Healthcare workers obviously flee for their lives, leaving health facilities deserted as was the case in Mozambique in 2021 [13].

Breakdown of the Health System
There is evidence of the destruction of health facilities in conflict-laden areas of the world, as well as the closure of health facilities due to insecurity affecting health personnel and their consequent displacement. This is evident in the conflict in Northeastern Ethiopia as of 2022, Colombia, Cameroon and Somalia , though with limited reports on this from the official global actors and UN agencies like the World Health Organisation. Even some of the functional facilities will lack basic supplies to meet the continually increasing demand for services because of the conflict [14-15].

Sexual and Gender-Based Violence
Social support networks are almost eliminated in conflict and humanitarian crisis situations, predisposing the girl child and women to various forms of violence, including, inter alia, violations, sexual assault, as well as psychological and emotional abuse [16]. The main driving force exposing women and adolescents to gender-based violence is physical separation from the family and community, which may result in unplanned pregnancies, other sexually transmitted diseases (including HIV), fistulas, and injuries, among others [17].

Maternal and Child Health
Maternal and child health face another devastating setback in conflict situations. This impact ranges from reduced access to, and use of maternal and child health services, to increased maternal and child morbidity and mortality compared with conflict-free regions of the world. This effect spans through the neonatal, infant, and under-5 morbidity and mortality, as well as direct maternal morbidity and mortality. The under-5 mortality rate usually spikes in conflict situations, and the time required to return to the pre-conflict state is considerable and varies from country to country, with some countries like Bosnia and Herzegovina, Syria and Rwanda, taking more than 15 years to return to the pre-conflict state [18].

Increased Incidence of Non-Communicable Diseases (NCDs)
Armed conflicts disrupt health systems, affecting all aspects of healthcare, including the management of Non-Communicable Diseases (NCDs). Limited access to healthcare leads to a surge in NCD-related morbidity and mortality. Additionally, the management of NCDs, particularly those intricately linked to nutrition such as diabetes, is significantly compromised in displaced populations where food assistance focuses on calories per day rather than quality [19]. The WHO estimates that 66.5% of NCD deaths in the Eastern Mediterranean Region are attributable to armed conflicts [20].

Vaccination-Related Health Effects of Humanitarian Crises
The overarching purpose of vaccination and immunisation initiatives is to save lives and protect people's health by increasing equitable and sustainable access to and use of vaccines, especially among the under-5 population. Achievement of Good Health and Wellbeing to all at all ages is SDG 3 which has nine targets and four sub targets (United Nations, 2025). Target 3.2 focuses on reduction in newborn and under five mortalities, while sub target 3B focuses on development of Vaccines and medicines, which serve as a means of reducing under five mortalities through improved vaccination coverage, as well as all other health targets of SDG 3. Immunisation has a direct positive effect on good health and in turn contributes to the achievement of various other SDGs.

The effect of armed conflict on vaccination initiatives is severe, drastically lowering vaccination coverage. This manifests itself through displaced populations, destroyed healthcare infrastructure, disruptions in the Vaccine Supply Chain, insecurity on the vaccination teams, compromised access to health facilities and the poor vaccine uptake due to suspicion of weaponised vaccines among others. We shall now discuss each of these effects in detail [21].

Mobile Populations and the Impact on Global Vaccination
Mobile populations refer either to the nomadic population or those displaced by conflict like refugees and internally displaced populations [22]. Despite the proven and obvious healthcare and economic benefits of vaccination, mobile populations uptake of vaccination is compromised by a couple of factors. Firstly, a nomadic mobile population is almost always distant from health facilities, they lack the necessary information on vaccination, and their mobile lifestyle may impact not just the initiation but equally the continuity of the vaccination process due to disrupted schedules [23]. Displaced populations (refugees and internally displaced) present similar obstacles to vaccination coverage because displacement limits access to health facilities, and information on vaccination and immunisation [24]. Additionally, language barriers, socioeconomic challenges and of course little or no trust in the vaccination program with the ideology of weaponised vaccines results in a higher incidence of Vaccine-Preventable Diseases (VPDs) like measles, mumps, hepatitis B and Poliomyelitis [25-26].

Destroyed Health Infrastructure
Health facilities appear to become the new and deliberate target during humanitarian crises despite the number of international conventions under International Humanitarian Law stating that medical units must be protected at all times and stressing medical neutrality [27-28]. Regarding medical neutrality, healthcare practitioners and their patients are positioned outside the field of politics and patients ought to be treated impartially and medical practitioners are shielded from the demands of war and conflict [29]. Destroyed health infrastructure and non-respect of medical neutrality force the Healthcare Professionals to flee for safety as well instead of attending to the needs of the injured during war. No team is therefore left behind to attend to the needs of the sick. The direct consequence is an increased proportion of children with zero-dose vaccination besides those that initiate and cannot continue follow up. The 2030 agenda of SDGs is thus significantly frustrated [30].

Disruptions in the Vaccine Supply Chain

Acquisition, transportation, storage and distribution of pharmaceutical products require special handling conditions. Vaccines are no exception to this reality and require even stringent and stricter continuous handling conditions like temperature control to ensure viability [31]. Vaccine delivery becomes compromised from roadblocks and frequent lock downs [32]. During conflict situations, destruction of public property and electrical interruptions become weaponised and strategic leading to widespread destruction and long-term disruptions on this vital commodity supply chain [33]. Electrical interruptions have a devastating and cascading effect on thermos-labile health commodities like vaccines, the result being outbreaks of VPDs like measles, mumps and rubella even in communities with good vaccination coverage. This arises inter alia because of vaccine failure due to inappropriate handling and failure to maintain cold chain, thus jeopardising all vaccination and immunisation efforts [32].

Insecurity on Mobile Vaccination Teams

Two major strategies are employed in vaccination programs: vaccination at the health facilities and vaccination in the communities (outreach) using mobile agents [34] with each strategy showing varying coverage rates across settings. However, community outreach through Community Health Workers (CHWs) facilitates coverage and helps overcome barriers with demonstrated success stories in Nepal, Senegal, and Zambia [35]. In a conflict situation, health facilities may become non-functional through targeted attacks, leaving the population with only community outreach programs organised from an apparently peaceful location (usually out of the conflict area) through mobile vaccination teams. However, there is no best strategy in a conflict situation, and each strategy can be applied based on an analysis of each conflict. One approach is to negotiate secure physical access with all conflicting parties; an approach that has been proven in Colombia, Somalia, and Pakistan [36].

Compromised Access to Vaccination Teams

Negotiation with warring parties does not always yield positive results. In Sudan, negotiation to access some parts of the country for humanitarian assistance met with competing interests on conflicting parties; the central government preferring assistance coordinated from the capital, while the opposing camp wanted the assistance to come through South Sudan [22]. This compromises access. Therefore, negotiation with the parties is not a one-size-fits-all approach as health facilities and CHWs have been targets by warring parties in conflict situation [27].

Uncompromised Access but a Displaced Population

In conflict stations, millions of children go without routine immunisation, not just because of compromised access, but equally due to displacement of the population. This results in outbreaks of VPDs. Negotiation to access an area during conflict for humanitarian purposes has proven to work in many settings. However, access does not imply automatic success in the intended humanitarian mission. During conflict, internal displacement of the population implies automatic compromised access to all interventions in the conflict zones. The case of Sudan again is a typical example. As SABIN Vaccine Institute put it:

"Displacement will lead to loss of contacts of the parents, which makes it difficult for service providers to trace the children who missed their doses at the health facilities" [37]

Poor Vaccine Uptake/ Unwillingness to Accept Vaccination

Vaccine uptake in conflict situations is significantly compromised. Scepticism about their "sanity" and the perception of vaccines as being weaponised by government bodies is a serious concern. This was the challenge faced during the roll-out of the SARS-CoV-2 vaccine in 2022 with the perception of pharmaceutical companies to be collaborating with governments to victimise the population [38]. This hesitancy and refusal of vaccination even become more pronounced in conflict situations where the intents of the government can be doubted by rival factions and the population within the community [39].

The Case of Cameroon's Northwest and Southwest (NWSW) Regions

Geographical Context

Geographically Cameroon has a population of 29 123 744 as of 2024 dispersed over a surface area of 475 442 sq km [40]. The Northwest and Southwest Regions cover a total surface area of 42710 sq km and make up about 9% of the country's total surface area. The two English-speaking Regions of Cameroon make up about 16% of the population [41,42]. Cameroon is located strategically between West and Central Africa, bound to the West by Nigeria, to the North by Tchad, to the East by the Central Arican Republic, and to the South by Equatorial Guinea, Gabon and Congo (Figure 2).

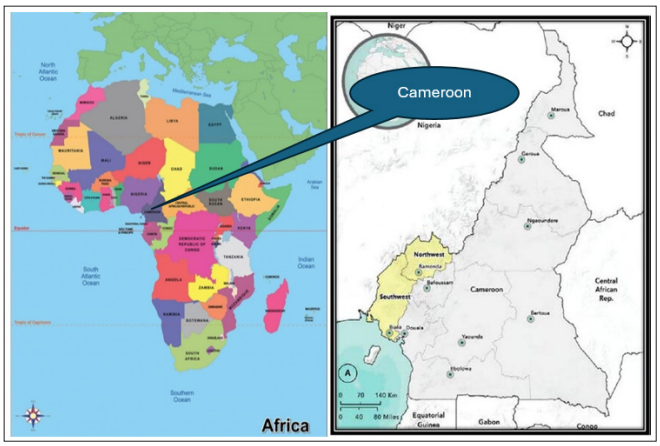

Figure 2: Map of Africa (Left) and Cameroon (Right) Showing the Conflict-hit NWSW (in Yellow). Source: (Bang, 2024)

Crises Context

Years have elapsed since the start of the socio-political crisis in NWSW in 2016 with many lives having been lost and millions internally displaced within the country. From the start of the conflict in NWSW, there has been a significant drop in vaccination coverage for all vaccines in both Regions affecting national targets [43]. Multiple conflict-related factors affect vaccination coverage with some consequences as we now discuss.

Persistent Lockdowns

The NWSW continue to experience lockdowns amidst the ongoing conflict. Some of the lockdown periods last for as long as 5 weeks during which time there is compromised civilian safety (including health care professionals), and the movement of people and goods, including health commodities is significantly compromised [44]. The blocked roads that characterise the lockdown periods hamper surveillance due to limited movements [45]. Vaccination initiatives are no exception to these interruptions, and result in increased zero-dose children as well as poor vaccination completion coverage.

Utilisation of Health Facilities

There is a significant reduction in the utilisation of health facilities because communities are becoming increasingly inaccessible with attacks on health care providers and infrastructure [32]. Additionally, the delivery of health commodities to health facilities is compromised by blocked roads and frequent lockdowns.

Compromised Vaccination Coverage

Both vaccination initiation and completion have been affected. As of April 2025, UNICEF estimated over 350 000 children to have either been under vaccinated or unvaccinated because of the crisis with resultant outbreak of VPDs. Earlier on, Saidu, et al., [43] documented a dramatic drop in vaccination coverage for measles and rubella (MR), oral polio vaccine (OPV), Bacillus Calmette-Guerin (BCG) as well as diphtheria, pertussis and tetanus (DPT) in 2019 compared to the pre-conflict era where vaccination coverage was acceptable even in the most enclaved areas of the Regions [46]. Access to healthcare is severely compromised because of breakdowns in the healthcare delivery system. This has resulted in outbreaks such as measles, yellow fever, and tetanus.

We therefore perceive the need for a different approach to vaccination. Instead of providing vaccination alone and not addressing the other needs of the population and the spectrum of the social determinants of health that are compromised because of the conflict, the Cameroon Baptist Convention Health Services (CBCHS) adopted the "Handshake Model" of vaccination coverage. In this model the backbone is Strategic Coordination. This involves first mapping out active humanitarian actors in each District with their various areas of expertise, then build partnerships with the actors so that broader healthcare services accompany the immunisation services, thus transforming vaccination post to multiservice health hubs. This involves a priori negotiation of access to the community with the armed groups This approach has resulted in improved coverage and delivery of immunisation and integrated health services in areas that others cannot reach [47].

Dysfunctional Health Facilities

From 2019, at least one dedicated facility in each of the 19 Health District in the North West and 18 Health Districts in the South West Regions offering immunisation services has been affected by the ongoing crisis [48]. This situation in turn affects mobile vaccination teams because the facilities serve as the hub. Any access of mobile vaccination teams requires a priori negotiation of access with the warring factions to get into the communities [49].

Outbreaks in Some Health Districts

Among the health districts heavily impacted by the effect of the armed conflict is Eyumodjock which faces two challenges. Firstly, the current socio-political crisis with frequent lock downs, ghost towns and gun battles makes accessing the unvaccinated an up-hill task. Secondly, the hard-to-reach terrain serves as a natural obstacle that renders the areas difficult to access the unimmunised children, creating a fertile ground for children with zero-dose vaccination coverage [50]. The consequence of these contributing factors in this terrain is the Measles outbreaks in Cameroon in 2023 which affected many health districts in other Regions and did not spare Eyumodjock and Wabane Health Districts. The health districts finally contained the outbreak thanks to the intervention of the teams in place with support from Global Partners like UNICEF even in the midst of armed conflicts [51].

In an unpublished report presented by the Chief of Health District of Wabane Health district in 2025, more than 50 children were suspected to have been infected with Measles in week 32 in the Health District, a suspicion that met with a rapid response team that was deployed to the communities to verify and collect specimens for onwards transmission to the Reference Laboratory for testing and confirmation. The number of confirmed cases qualified the classification as an outbreak, which is linked to the ongoing conflict.

Since Eyumodjock and Wabane were not the lone affected Districts, a nationwide vaccination campaign was launched in 2023 to contain the outbreak of measles and rubella that affected even health districts in the Centre Region. Meiganga Health District in the Adamawa Region was also hit by the measles outbreak in 2023, affecting adults and children alike with contributing factors being poor vaccine storage, poor vaccination status (either zero dose or unknown), and mass movement of the population within the country during the outbreak [51-52].

The 2023 measles outbreak was not the first since the start of the crisis in the two Anglophone Regions of Cameroon. Bakassi, Ekondo Titi, and Limbe Health Districts equally experienced a measles outbreak earlier on in 2019, with that of Limbe localised around the Mabeta Health Area [53]. The contributing factors to the outbreak include limited vaccine availability, poor storage conditions for available vaccines, and low vaccination coverage in the outbreak areas. All these factors are linked to the ongoing crises that began in 2016, and two of the three affected Health Districts (Bakassi and Ekondo Titi) were, and remain, highly insecure for free movement and vaccination initiatives.

Compromised Surveillance due to Conflict

One of the effective strategies to effectively detect disease outbreaks is disease surveillance which relies heavily on reporting from the health facilities through the Health Districts as coordinating units. From the start of the Anglophone Crisis in 2016, disease surveillance systems deteriorated significantly in the NWSW Regions of Cameroon, with unreported suspected cases of Yellow Fever, neonatal tetanus and Acute flaccid paralysis [54-55]. This is likely due to reduced surveillance than lack of an outbreak.

The Intervention Context

In areas of Cameroon unaffected by the humanitarian crisis, it is possible to intervene promptly upon detection of a suspected case and subsequent confirmation. This is evidenced by the rapid intervention by the International Federation of Red Cross and Red Crescent Societies (IFRC), Cameroon Red Cross, in the Mayo-Oulu community in the North Region through a Community Volunteer agent's report that stopped the measles outbreak earlier in 2025 despite confirmation of a positive suspected case [56].

Despite these interventions, vaccine rejection is still a common phenomenon due to fear of the vaccines being weaponised, especially if the intervention is initiated and led by the government, and due to misinformation.

From the above discussion, we observe the resurgence of VPDs in Cameroon over the past four years. Poliomyelitis outbreaks have been reported post SARS-CoV-2 pandemic, mostly with the circulating vaccine-derived poliovirus (cVDPV), all linked either directly or indirectly to the ongoing insecurity in the two Anglophone Regions, which have caused a great decline in vaccination coverage [57].

Recommendations on the Way Forward

Given the devastating effects of conflict on immunisation coverage, conflicts are better prevented than managed. Prevention is always

better and cheaper than a cure. Any global attempt to limit armed conflict requires a multidimensional approach that addresses all potential root causes. The following approaches can be employed:

- Address root causes like bad governance, inequalities, and inequitable distribution of resources
- Engage in dialogue for ongoing conflicts to bring them to an end
- Apply justice to all defaulters in international humanitarian law during conflict, irrespective of their status
- Establish and stringently apply control systems on the circulation of arms that fuel armed conflicts
- Educate the population on the importance of peace and the challenges involved in managing armed conflicts
- Identify and support movements and initiatives that promote dialogue and compassion with peaceful conflict resolution strategies.

Conclusions

This resurgence of VPDs is not unique to Cameroon as a conflict-plagued area. Other conflict-affected countries record similar findings in relation to VPDs. These trends illustrate how insecurity and logistical challenges compromise global vaccination initiatives including but not limited to challenges in vaccine delivery and handling, and vaccination coverage, thus threatening immunisation goals. This phenomenon directly affects the achievement of SDG 3 on Good Health and Well-being and indirectly affects other SDGs. If we dream of achieving a healthy world by 2030 and beyond, we must address the root causes of armed conflicts, not by force, but through negotiation and dialogue. Behind every figure mentioned in this report is a life lost, a pain inflicted on the family, and paralysis to the economy because of inaction from the governing authorities and biased reporting [58-71].

Conflict of Interest

The authors declare that they have no competing interests

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