# Improving Child Immunization Coverage in Somaliland Through Human Centered Design

## Final Report

## 2025

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# Abbreviations and Acronyms

**ANC** – Antenatal Care

**DPT–HepB–Hib** – Diphtheria, Pertussis, Tetanus, Hepatitis B, and *Haemophilus influenzae* type b

**EPI** – Expanded Programme on Immunization

**FGD** – Focus Group Discussion

**GFF** – Global Financing Facility

**GPEI** – Global Polio Eradication Initiative

**HCD** – Human-Centered Design

**HMIS** – Health Management Information System

**HRH** – Human Resources for Health

**IDP** – Internally Displaced Persons

**IEC** – Information, Education, and Communication

**IPV** – Inactivated Polio Vaccine

**MCH** – Maternal and Child Health

**MOHD** – Ministry of Health Development

**OPV** – Oral Polio Vaccine

**SBC** – Social and Behavior Change

**SMS** – Short Message Service

**SHDS** – Somaliland Health and Demographic Survey

**UNICEF** – United Nations Children's Fund

**WHO** – World Health Organization

**ZDC** – Zero-Dose Children

# Foreword

It gives me great pleasure to present this report on child immunization in Somaliland, developed at a time when our health system continues to operate within a complex and evolving environment. Despite significant challenges—including fragile infrastructure, recurrent climatic shocks, population displacement, and resource constraints—our commitment to safeguarding the health and future of every child remains unwavering.

Immunization is one of the most effective and equitable public health interventions available to us. It saves lives, prevents disability, and protects communities from outbreaks of vaccine-preventable diseases. For Somaliland, strengthening routine immunization services is not only a health priority but also a critical investment in human capital, resilience, and national development.

Over the years, we have made commendable progress in expanding access to essential vaccines through the dedication of our health workers, the trust of our communities, and strong collaboration with local and international partners. However, persistent inequities in access, hard-to-reach populations, misinformation, and service delivery constraints continue to threaten these gains. Children living in remote, nomadic, and crisis-affected settings remain particularly vulnerable.

This report provides important evidence on the current status of child immunization in Somaliland, highlights the barriers faced in complex settings, and outlines practical recommendations to strengthen service delivery, community engagement, and system resilience. It serves as both a reflection of our progress and a call to action.

As the Ministry of Health Development, we reaffirm our commitment to ensuring that no child is left behind. We will continue to prioritize innovative approaches, strengthen partnerships, and invest in frontline health systems to reach every child with life-saving vaccines, regardless of location or circumstance.

I extend my sincere appreciation to all health workers, partners, community leaders, and caregivers whose tireless efforts make immunization possible across Somaliland. Together, we can build a healthier future for our children and our nation.

Let this report guide our collective action and renew our determination to protect every child.

**Hon. Bashir Hussein Hersi**

**Minister, Ministry of Health Development (MoHD)**

**Republic of Somaliland, Hargeisa**

# Acknowledgment

On behalf of the Ministry of Health Development of Somaliland, I would like to express our sincere appreciation to all partners and stakeholders who have contributed to an important milestone in our health sector: the first-ever application of Human-Centered Design (HCD) approaches to address the immunization gap, with a particular focus on reaching zero-dose children. This innovative approach marks a significant step forward in how we understand and respond to the needs of our communities. By placing families, caregivers, and frontline health workers at the center of solution design, we are developing more responsive, inclusive, and sustainable strategies to ensure that no child is left behind. The adoption of Human-Centered Design reflects our commitment to evidence-based planning, community engagement, and equitable service delivery.

We deeply value the unwavering partnership and technical leadership of UNICEF and WHO, who continue to coordinate immunization campaigns, provide life-saving vaccines, and support the implementation of the Expanded Program on Immunization (EPI).

We extend our gratitude to Gavi, the Vaccine Alliance, for its critical support in strengthening cold-chain equipment and ensuring a reliable vaccine supply, particularly in hard-to-reach and remote districts.

Our appreciation also goes to the World Bank and the Global Financing Facility (GFF) for financing transformative initiatives such as the Damal Caafimaad Project, which strengthens health facilities and service delivery, with dedicated implementation support from partners, including Alight International.

We acknowledge the essential collaboration of local NGOs and the private sector, who work hand-in-hand with the Ministry through service delivery partnerships to provide free vaccination services to communities.

We further recognize the valuable contributions of other key supporters, including the Global Polio Eradication Initiative (GPEI), the UK's Foreign, Commonwealth & Development Office (FCDO), and the Bill & Melinda Gates Foundation, whose continued commitment strengthens Somaliland's immunization and primary healthcare systems.

Together, these partnerships make it possible for Somaliland to advance toward universal immunization coverage and protect every child from vaccine-preventable diseases. We remain committed to sustaining this collaborative spirit as we innovate, learn, and scale solutions that improve the health and well-being of all our people.

With sincere appreciation,

**Dr. Ahmed Mohamoud Jama**

**Director General, Ministry of Health Development (MoHD)**

**Republic of Somaliland, Hargeisa**

# Management Summary

The child immunization health sector in Somaliland is undergoing system strengthening, and many gains have been realized, namely the availability of immunization services in most parts of the country through a reliable supply chain.

Still, many children miss immunization due to supply chain constraints and weak demand. Vaccine stock-outs, the multi-dose vial policy, limited service delivery hours, and the absence of an efficient child registration and monitoring system create gaps in ensuring every child is vaccinated. Comfortable service provision spaces and competent, professional human resources for health are instrumental in building confidence and improving service quality at health facilities and remain areas for improvement.

Constraints faced by many rural agropastoralists and IDPs are mostly economic in nature, as transport is required and families often do not have readily available money. Husbands play a key role by giving authorization and providing financial support, but their low awareness of immunization and its benefits limits their involvement, thereby exacerbating low immunization coverage. Male involvement has the potential to unlock significant demand.

Nomadic pastoralists are unique in context and, thanks to technology, these communities embrace digital solutions. They prefer to have their children registered and tracked and to be informed via a telephone call when the next antigen is due.

In conclusion, the country cannot adopt a one-size-fits-all approach, as this would be structurally and economically unaffordable. However, quick gains can be made by eliminating supply chain bottlenecks and improving service quality at all health centers as a starting point, as this will significantly generate demand. Additionally, adjustments in service delivery, leveraging husbands' involvement, and using technology for rural and nomadic communities to encourage visits to health facilities can trigger improvements, thus avoiding the need to build physical infrastructure in low-population-density areas.

# 1

# Preamble

Immunization, as a primary health care strategy, improves child survival by preventing the deaths of millions of children around the world, especially those in low-income settings, and helps countries move toward universal health coverage.

According to the Somaliland Health and Demographi Survey (HDS) 2020, 13% of all children aged 12–2 months were fully vaccinated, while 68% had nc received any vaccine (zero-dose children, or ZDC).

According to WHO, a child is considered full vaccinated if he or she has received BCG (TB), thre doses of DPT-HepB-Hib, at least three doses of the poli vaccine, and one dose of the measles vaccine. I Somaliland, children aged 12–23 months (the age b which they should have received all basic vaccinations who had received all basic vaccinations accounted fo 13% (Somaliland HDS, 2020), which is far below th WHO target of 80%, while 68% of children had nc received any vaccination (SDHS, 2020); this category i referred to as zero-dose children (ZDC).

The prevalence of both defaulters and ZDC depict continuing significant challenges in reaching all childre with essential immunization services, especially those i marginalized, hard-to-reach, or underserved communities such as nomadic populations, the urban poor, and displaced families. This indicates that traditional, supply-driven outreach approaches, a practiced elsewhere in the world, have not adequatel addressed the Somali context-specific barriers faced b families and caregivers.

1. In order to reverse this trend, there is a need for new, out of-the-box initiatives informed by local insights to unlock demand-driven behavior change.
2. The Somaliland Ministry of Health Development (MOHD), with support from partners, commissioned a consultancy assignment to apply a Human-Centered Design (HCD) process to identify contextual barriers, generate ideas, and develop low-level prototypes that could potentially address the low immunization coverage challenge.
3. This report presents the findings of the HCD process used and is intended to provide both an evidence base and potential solutions (prototypes) that need to be tested, refined, and scaled up in future programming.
4. **Overview of the HCD approach used**
5. An iterative design and prototyping approach was used, whereby ideas for generating prototypes were identified and quickly tested with real end-users. Adjustments were made based on user feedback, and the low-fidelity prototypes require further development and live testing until final designs for scale-up are achieved.
6. **Discover or Empathy Phase:** This phase consists of a literature review and qualitative research.
7. **Design Phase:** Low fidelity prototypes developed following ideation and quick iteration with potential respondents.

# Methodology

**DISCOVER or EMPATHY**

It aims at deeply understanding the problem that needs to be solved. It employs the principal of empathy which aims to see the challenges from the users' point of view.

This stage involved detailed literature review, and primary research through focus group discussions.

**CREATE or IDEATE and PROTOTYPE**

During the knowledge workshop, participants generated ideas and created low-fidelity prototypes which were tested with real respondents from the next day

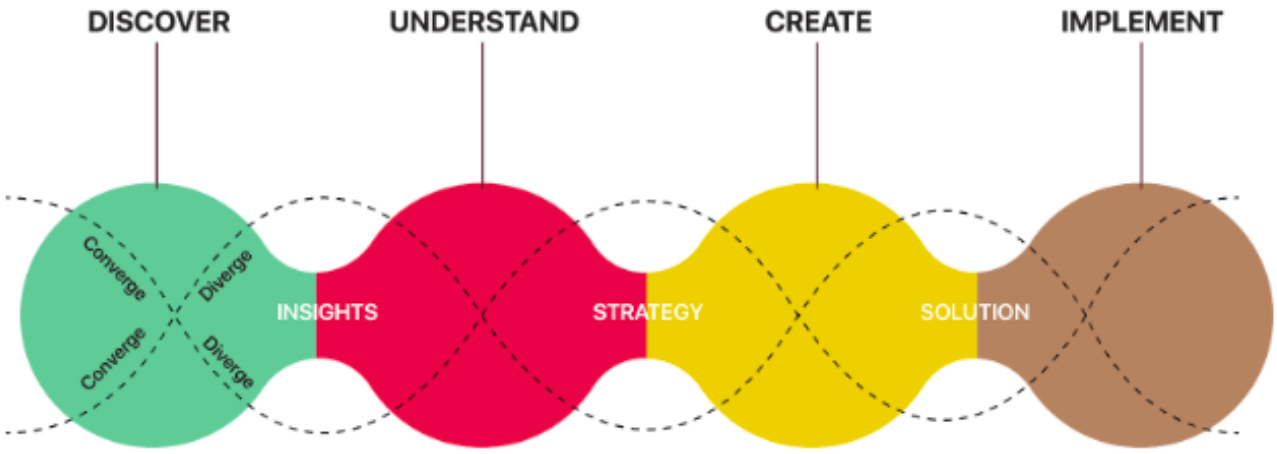


*Figure 1: Human Centered Design Process*

**PILOT or IMPLEMENT**

This is a live trial phase and is to be carried out at an agreed future date. Working prototypes will be made and tested at a specific location in small scale and if successful, learnings will be used to refine the prototype(s) for scale-up

**UNDERSTAND or INTERPRETATION**

A knowledge sharing workshop bringing together partners for a 1-day workshop. It involved validation of the user insights and validating the design challenges

# DISCOVER

## Literature Review

This literature review is a strategic tool that builds a clear understanding of the zero-dose challenge and identifies the key barriers. It serves as a foundation for understanding and addressing the challenge of low immunization coverage in Somaliland, particularly the persistent problem of zero-dose children. It contributes to the evidence base to ensure that

design interventions are contextually appropriate and more likely to succeed.

To understand the challenge of zero-dose children in Somaliland, a broad range of literature was reviewed to provide both quantitative evidence and contextual insights. This includes national policy and planning documents such as the Ministry of Health Development's Expanded Program on Immunization (EPI) reports, Health Sector Strategic Plans, routine HMIS data, and campaign coverage reports, which show trends in immunization performance and geographic disparities.

Population-based surveys and assessments, including DHS/MICS findings, coverage evaluation surveys, and zero-dose mapping studies, were examined to identify underserved populations and inequities. Partner and donor reports from UNICEF, WHO, Gavi, the World Bank, and the Global Financing Facility offered analyses of health system bottlenecks such as cold-chain gaps, workforce constraints, and service delivery challenges.

In addition, operational research, social and behavior change studies, community engagement assessments, and formative research reports provided insights into caregiver perceptions, cultural beliefs, access barriers, and demand-side factors influencing uptake.

Together, this body of literature enabled a comprehensive understanding of the structural, social, and behavioral determinants contributing to zero-dose children and helped identify the knowledge gaps to be addressed through empirical research.

# 2

# Supply Overview

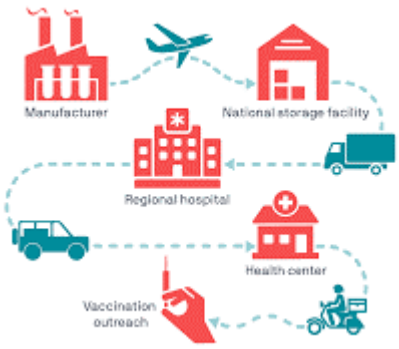


*Figure 2: Immunization supply chain representation*

As per the Somaliland's expanded program on immunization (EPI) policy 2020, the country's health system:

It is supported by: 378 health facilities comprising functioning hospitals, health centers, clinics and primary health care units.

There has been a significant investment in human resources for health (HRH) with notably varied concentrations in different regions.

The overall number and density of doctors, nurses and midwives remain low especially in rural and nomadic pastoralist areas.

The government defines the EPI policy and operational environment in terms of:

Service delivery policies

Delivery mechanism (EPHS)

Partnership engagements

Demand creation

Vaccine availability

Low financial strain on target users

UNICEF as a partner supports the EPI in procurement and distribution of vaccines and injection equipment of assured quality, maintenance of the cold chain, production and dissemination of IEC materials, provision of financial assistance to other partners for implementing outreach immunization sessions.

Other partners include the WHO, providing technical assistance (TA) to the MOHD and all partners; and financing immunization activities. The TA includes technical guidelines, capacity building as well as directly supporting Oral Polio Vaccine (OPV) mass immunization and surveillance of preventable diseases.

International and national NGOs support immunization activities and they run most health centers, and are involved in immunization service delivery, disease surveillance, social mobilization, training of health workers, supporting logistics and provision of both technical and financial support.

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**Observation:**

- The country enjoys a robust supply system; however, uptake still faces challenges in reaching a significant part of the population, including reported frequent stock-outs and non-utilized or expired vials. The policy's aim is to ensure that immunization reaches children equitably.

# 3

# EPI Policy and Demand Creation Review

*Figure 3: EPI representation*

The policy's aim is to ensure that immunization reaches children equitably.

The country's EPI policy articulates the immunization schedule for basic coverage in the first 11 months of a child's life:

| Age | Vaccines | |
|---|---|---|
| At Birth (up to 2 weeks) | BCG | OPV0 |
| 6 weeks (42 days) | DPT-HepB-Hib1 | OPV1 |
| 10 weeks | DPT-HepB-Hib2 | OPV2 |
| 14 weeks | DPT-HepB-Hib3 | OPV3 |
| 14 weeks | IPV1 | |
| 9 months | IPV2 | |
| 9 months | Measles | |
| 15-18 months | Measles | |

*Table 1: EPI Immunization schedule*

Given the unique challenges the country faces in increasing coverage, the policy further recommends administering multiple antigens at once to reduce the number of contacts required to complete the immunization series, especially for hard-to-reach rural and nomadic populations.

The policy integrates a demand-creation component to ensure that all eligible children are not only reached, but that caregivers are also aware of the benefits of immunization and readily respond to the available services.

Demand creation is implemented through social mobilization within community structures such as health committees, religious institutions, professional associations, NGOs, the private sector, women's associations, youth groups, and school programs. The policy emphasizes the need to use social media more effectively and to sensitize the media before engaging in social mobilization for EPI, in order to appropriately disseminate necessary information to the public.

In addition, relevant digital innovations in mass communication, including mobile messaging platforms such as SMS, can be explored as reminders for parents to complete immunization schedules and to help track missed children.

### Observation:

Most of the basic vaccines are administered within the first four months of life. During this stage, mothers are also recuperating, and even if they have adequate knowledge, it may not be easy for them to travel to health centers, especially if they live far away or where significant transportation costs are required.

A deeper understanding of the real constraints at this stage, as well as the cultural considerations, may be necessary to motivate new mothers to travel to health centers.

# 4

# Insights from the Somali Culture

Health workers need to recognize the social determinants of health if they are to make meaningful impacts in communities. While some determinants of health are modifiable, others are not. Cultural safety in delivering health care is crucial if services provided are to be appropriate and acceptable to health care seekers (Latif, A. S. (2020).

Somali culture is rooted in a nomadic agro-pastoral tradition, a strong patriarchal clan system, and the Islamic faith, which heavily influences social customs and daily life. This section highlights

aspects of Somali culture and how these positively or negatively affect the acceptance and utilization of health services.

Some of the best tools for studying culture are ethnographic studies, community listening, and observation. Several significant ethnographic studies have been conducted to better understand Somali culture and ways of life. Savage (2000) argues that qualitative research has long been regarded as the lowest form in the hierarchy of evidence; however, within the qualitative paradigm, ethnography is invaluable because it pays attention to context and synthesizes data from different methods. Moreover, ethnography offers a holistic way of exploring the relationships between different types of evidence that underpin health behavior and clinical practice.

*"ethnography is not simply a method of collecting data but also offers a theoretical analysis and interpretation of the data, and requires a researcher's recognition of their own positionality (i.e., where the researcher 'sits' in relation to those he or she is studying, e.g., in terms of gender, culture or power), Cupit et al (2018). Waring and Jones, 2016 underscore the value of ethnography as an account of the 'social and cultural organization of 'everyday life'', that gives the researcher an insider perspective.*

### 4.1 Portrayal of poverty and destitution negates the community's sense of pride and undervalues the wealth they own:

*Figure 4: Somali women herding livestock. Picture courtesy of CEMAS Global*

Somalis object to being labeled as "poor" due to the complex and painful nature of how global poverty narratives have shaped their national and personal identity. For decades, international reporting has often focused on conflict, famine, and humanitarian needs, which, while real, have painted a one-dimensional picture of the country. Somalis express frustration over these portrayals. Somalis view wealth not merely as personal financial accumulation but as a combination of reciprocal social networks, significant livestock holdings, and international remittances. Vast pasturelands are viewed as the most valuable resource. Somalis are generally hostile to interactions and services that promote the insinuation and connotations of them being poor, their heritage is a source of pride.

### 4.2 Trust drives most social relationships: Somalis trust more informal networks than state institutions

*Figure 5: Somali women waiting for immunizations services. Photo courtesy of Concern Worldwide*

Carrier and Elliott (2018) highlight how "trust" is a value and virtue that drives almost every aspect of Somali life. "Trust" emerged as a key concept for understanding the social foundations of economic and social life. Social relations are given greater importance than relations with the state, especially among Somali populations that have had limited interaction with government institutions. Historically, people have placed more trust in their clan and informal networks than in the government. Years of political challenges have severely eroded confidence in formal state institutions.

### 4.3 Quality of health services

Most Somalis have had some experience with Western-style medicine. However, the concept of using the medical system to maintain health—such as routine prenatal care, child wellness visits, or preventive services—may not be familiar, depending on whether a person comes from a rural or urban area. Families are often very dissatisfied when they travel long distances and wait to be seen at a clinic without receiving timely services. It is common for clinics that have gained the trust of Somali patients to be recommended to others within the community. Once word spreads, community members may actively seek out that provider.

### 4.4 Family leadership and gender roles

Men are usually the heads of households, while women manage household finances and take care of the children. It is culturally unacceptable for a man not to be perceived as being in charge of his home. Somali culture places strong emphasis on the family, which is considered more important than the individual in all aspects of life.

### 4.5 Practices around pregnancy, child birth and post-partum period

*Figure 6: Somali women participating in a focus group discussion*

Mothers begin preparing girls to run a household when they are between seven and nine years old. At this time, girls are expected to assume considerable responsibility at home. Childbearing usually commences shortly after marriage, and a woman's status is enhanced by the number of children she bears. The concept of planning when to have or not to have children has limited cultural relevance. Expectant and newly delivered mothers benefit from a strong network of women within Somali culture. Births most frequently occur at home, especially in rural and nomadic pastoralist communities, and are attended by traditional birth attendants. After birth, both the mother and the newborn receive traditional in-door neonatal and postnatal care for a period of about 40 days, which coincides with the time when initial routine immunizations are scheduled. These home stays contribute significantly to the occurrence of zero-dose children (ZDC).

## Observation

Somalis, especially those living in rural, internally displaced, and nomadic pastoralist communities, have strong

customs surrounding marriage and childbirth, where young mothers receive postpartum support from their own mothers. While this support helps them cope with the challenges associated with limited access to health care services, it may also delay early contact with immunization services.

# 5

# Immunization Coverage by Region

## 5.1 Somaliland's immunization coverage by region:

Figure 6.3 Vaccination of children

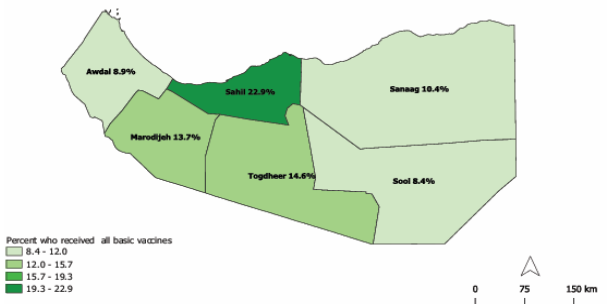


*Figure 7: Somaliland immunization coverage by region*

According to the SDHS 2020, Sahil region has the highest proportion of children who had received all basic vaccinations. Female children, children of birth order 4–5, children in nomadic areas, children in Sool and Sanaag regions, children of mothers with no education, and children from poor households were more likely to have received no vaccination.

In absolute numbers, an overview of ZDC data from the MOHD shows that the lowest coverage is in high-population regions. The data indicate that 70% of ZDC aged between 1 and 5 years are concentrated in Marodijeh, followed by Awdal and Togdheer, with Sanaag closely following.

| Region | Total 70% of Zero dose |
|---|---|
| Marodijex | 82,694 |
| Awdal | 49,674 |
| Togdheer | 49,562 |
| Sanaag | 42,768 |
| Sool | 33,399 |
| Sahil | 17,487 |
| **Total** | **275,584** |

*Table 2: Number of zero dose children by region*

| Region | District | Total |
|---|---|---|
| | B/Gubadle | 5,821 |
| | Hargeisa | 65,242 |
| Marodijex | Gabiley | 11,629 |
| | Baki | 5,772 |
| | Borama | 33,512 |
| | Lughaya | 4,675 |
| Awdal | Zeila | 5,715 |
| | Buhodle | 10,285 |
| | Burao | 31,827 |
| Togdheer | Odweyne | 7,450 |
| | Badan | 15,392 |
| | Elafweyn | 8,995 |
| Sanag | Erigavo | 18,382 |
| | Ainabo | 7,855 |
| | Hudun | 3,747 |
| | Las Anod | 17,051 |
| Sool | Taleh | 4,746 |
| | Berbera | 11,636 |
| Sahil | Sheikh | 5,851 |

*Table 3: Number of zero dose children by region and district*

## Observation

Families living in urban centers are more likely to have access to education. Education, cash income, and urbanization are strong predictors of acceptance and utilization of maternal health services, which in turn influence immunization uptake.

### 5.2 Analysis of Zero-Doze Children and defaulters

The issue of ZDC and partial immunization is not unique to Somaliland; similar patterns are observed across the Somali context, suggesting that country-specific structural and supply-side challenges are not the only barriers. Jelle M. et al. (2003) studied these barriers using a socio-ecological framework. At the individual level, barriers included fear due to lack of knowledge, mistrust of vaccines, concerns about side effects and misinformation, opportunity costs, and transportation costs.

At the interpersonal level, family members played an important role, as did the extent of women's decision-making autonomy. Community-level factors such as cultural practices, gender roles, and household mobility influenced vaccination uptake. Organizational issues at health facilities—such as long waiting times, vaccine stock-outs, distance to facilities, language barriers, and reluctance of health workers to open multi-dose vials—also affected vaccination. At the policy level, confusion about eligible ages for routine vaccination, age restrictions for catch-up vaccination, and specific antigens such as BCG were identified as important barriers.

Focusing on zero-dose children is particularly important because children who receive the first vaccine are highly likely to complete the remaining doses. Zero-dose children represent a significant gap in population immunity against vaccine-preventable diseases and are emblematic of unequal access to essential health services, especially in low- and middle-income countries. The Immunization Agenda 2030 (IA2030) includes, as one of its impact goals, a 50% reduction in the number of zero-dose children globally by 2030. Understanding who these children are and the predisposing conditions that affect them is crucial to achieving this target.

Literature consistently shows that many women cite lack of money as a major obstacle (61%), followed by distance to health care facilities (58%) (SLHDS, 2020). Nomadic married women, non-cash-employed women, women with no education, and those from poorer households face acute challenges in accessing health care. Of the 13% of children who had received all basic vaccinations, 19% were from the highest wealth quintile, compared to only 5% from the lowest wealth quintile (SLDHS, 2020).

These findings are corroborated by Cata-Preta et al. (2021), who analyzed DHS and MICS data across upper- and low-income countries. They found that zero-dose prevalence ranged from 5.2% in upper-middle-income countries to 11.1% in low-income countries, with a pooled prevalence of 7.7% across all countries studied. Zero-dose children were more frequently found in rural areas and in poorer households. Somaliland's zero-dose prevalence (67%) is proportionately higher than the global average, highlighting the urgency of addressing this challenge.

Cata-Preta et al.'s findings are further supported by Farrenkopf et al. (2023), who analyzed DHS and MICS data from 2011 to 2020 across 82 low-, lower-middle-, and upper-middle-income countries. They found that more than half (51.9%) of zero-dose children were concentrated in African countries. These children were predominantly located in rural areas (75.8%), in households within the lowest two wealth quintiles (62.7%), born to mothers who completed fewer than four antenatal care (ANC) visits (66.5%), and born at home (58.5%).

After controlling for other factors, children were three times more likely to be zero-dose if their

mother had not received any tetanus vaccination, 2.46 times more likely if their mother had not attended any ANC visits, and nearly twice as likely (1.87) if they were born at home. The authors concluded that lack of access to maternal health care is a strong risk factor for zero-dose status and highlighted important opportunities to improve the quality and integration of maternal and child health programs.

The unique challenges of Somaliland are further discussed by Abdikarim H. et al. (2025). He does not examine barriers from a supply-side perspective only, but also explores the role of culture in shaping demand for health services. He highlights cultural factors such as traditional gender norms that affect women's autonomy in health care decision-making, as well as nomadic lifestyles and dispersed rural populations that create geographical barriers to accessing health facilities.

Additionally, Somaliland's health system is still investing in infrastructure, as reflected in the uneven distribution of health facilities, with urban areas having better access than rural and nomadic regions. The cold chain remains a challenge due to unreliable or unavailable energy sources. A shortage of skilled providers in rural areas results in inconsistent quality of care, while financial barriers restrict access for low-income women.

From the foregoing evidence, low vaccination coverage can be viewed as an outcome of low ANC utilization and a preference for home delivery. While infrastructure, structural, and financial constraints cannot be downplayed, families continue to spend money on other needs, including fees paid to traditional birth attendants (TBAs) for delivery. There is therefore reason to hypothesize that significant psychological and cultural barriers underpin low immunization coverage.

For example, a qualitative study by Egal, J. A. et al. (2022) explains that preferences for home delivery assisted by a TBA, rather than facility-based skilled delivery, are linked to a perceived lack of reproductive agency in health facilities. Home births are often chosen regardless of potential risks or medical need because women seek a greater sense of control over the health environment. Expectations of respectful care are a vital consideration for women.

Similarly, Abdiwali, S. A. et al. (2024) emphasize lack of awareness, long distances, limited transportation access, economic barriers, lack of social support, prevailing beliefs and perceptions, and health facility–related factors such as provider attitude, long waiting times, and inadequate provider skills as drivers of low ANC utilization. These factors can reasonably be extended to explain low immunization uptake.

Primiparous mothers generally have higher anxiety levels due to lack of experience. They may be more willing to overcome barriers and spend money to seek care, attend ANC, and deliver in health facilities—where children are more likely to receive early immunization antigens (though some may later default). As women have more children, childbirth becomes normalized, and the cumulative burdens of raising children and managing household or livestock responsibilities may make it harder to make the same sacrifices.

In high-risk households with zero-dose children, diseases, the benefits of immunization, and the risks of not vaccinating are often not clearly understood. Therefore, improved knowledge and awareness are essential to build a compelling case for immunization uptake.

# 6

# Review of the Social Behavior Change Approach for Demand Creation

**Observation:**

Somaliland's SBC strategy is guided by the Integrated SBC Strategy 2025–2027. The strategy is built on consistently published evidence. The review observes that current messages are "dry," meaning they are direct and informative but do not sufficiently appeal to emotional drivers that can trigger behavior change. The reliance on written media may also present a barrier to effective messaging.

### 6.1 Evidence base for EPI and Maternal and Neonatal health

| SBC Sector | Identified Bottleneck | Causes |
|---|---|---|
| **EPI** | • Mistrust, rumors, misinformation on health services.<br>• Lower literacy and digital skills<br>• low knowledge of the importance of immunization<br>• Fear of vaccination side effects<br>• Displacements, conflicts, and migration<br>• Religious and cultural | • Lack of trust in vaccines and vaccinators<br>• Inadequate healthcare infrastructure<br>• Vaccine storage and cold chain management issues-especially in areas of unreliable electricity<br>• Limited awareness and education about the importance of immunization<br>• Concerns over quality and competency of |

| | | | |
|---|---|---|---|
| | influence creating vaccine hesitancy | healthcare services and staff | |
| **Maternal and Neonatal** | • Low knowledge about ANC benefits<br>• Limited awareness and low information about the value of skilled birth attendants<br>• Low knowledge and misinformation on vaccinations for both mothers and children<br>• Limited availability of emergency obstetric care<br>• Traditional and cultural practices and beliefs influence maternal and neonatal care-seeking behaviour | • Inadequate funding/resources for SBC activities and intervention<br>• Poverty and impoverishment<br>• Right information on childhood illnesses is lacking.<br>• Low knowledge among mothers who deliver in health facilities on Post Natal Care benefits.<br>• Limited access to birth spacing services and lack of skilled birth attendants, especially in remote areas<br>• Poor infrastructure and transportation | |
| **Key Messages** | Primary Target Audience | Communication Channels | Observations |
| Help mother know where health facilities are and what services they provide | Community health workers and health professionals, community leaders, religious leaders | Radio, SMS, Billboards, fliers, posters, pamphlets, and community dialogue | Health workers may not be trusted, community leaders may not understand the benefits and may be pro-government health services. Husbands not involved |
| Seek ante-natal care during your pregnancy | Pregnant Mothers | Radio, SMS, Billboards, fliers, | Mothers may not understand the benefits of ANC and |

| | | | |
|---|---|---|---|
| | | posters, pamphlets, and Community dialogue | communicate to husbands, husbands not involved |
| Be ready to deliver your baby in a health facility. That is most appropriate | Mothers, care givers, fathers | Radio drama, TV shows, IEC materials. | Traditional values on birth ignored during first 40 days of child's life) |
| Seek routine antenatal care for birth preparedness / complication readiness | Mothers, care givers, fathers | Radio, SMS, Billboards, fliers, posters, pamphlets and community dialogue | Complication may be scaring people who believe death is the will of Allah |
| Seek counselling on birth spacing methods | Mothers, care givers, fathers | Radio, SMS, Billboards, fliers, posters, pamphlets and community dialogue | Mixing birth spacing messaging may add to mistrust of health services. It's discouraging fertility |

### 6.2 SBC Communication strategy

| | | | |
|---|---|---|---|
| Immunization protects against several dangerous diseases including Measles and Polio. A child who is not immunized is more likely to become sick, permanently disabled or undernourished, and could possibly die.<br><br>All pregnant women and their new-borns need to be protected against tetanus. Even if a woman was immunized earlier, she needs to check with a trained health worker for advice on tetanus toxoid immunization. | General public, mothers, care givers, extended family | | Messaging dwells on fear, does not motivate the benefits of the life success of a healthy child.<br><br>Tetanus may be a disease many mothers are not aware of<br><br>This message may negate the belief that the immunization was effective |
| **Key Messages** | Primary Target Audience | Communication Channels | Observations |
| **Immunization is urgent and every child should complete all the recommended series immunizations as early protection is critical.** | | | This requirement poses a serious constraint to the mothers' schedule |
| **All prescribed vaccines are vital for baby's survival.** | | | It may not be convincing enough because there are children who were not vaccinated but are living normal life |
| **Vaccinate your children to keep them healthy** | General public, mothers, care givers, extended family | Radio, SMS, Billboards, fliers, posters, pamphlets and community dialogue | The concept of health may contract with that of nutrition. Fathers are not involved |

# 7

# Summary and Reflections of Literature Review

### 7.1 Problem summary:

The MOHD has put in place robust plans to improve maternal and child health through the EPHS, where women can access maternal health services through ANC, in-facility delivery, and child health services through neonatal immunization. However, neonatal immunization is hampered by low ANC utilization and home deliveries, especially among rural and nomadic pastoralist households. While attending ANC may be comparatively easier, achieving in-facility delivery is more challenging due to logistical barriers that arise at the onset of labor.

The user landscape is bipolar. On one end are families with higher levels of formal education, greater urbanization, and strong participation in the cash economy—this includes segments of the urban poor. These groups are more easily reached through health messaging and the supply of health products and services. On the other end are those with limited formal education who live in rural areas and rely primarily on crop farming and livestock keeping. They often do not prioritize selling livestock or holding wealth in cash terms. Their values and daily activities make it more difficult to utilize formal health services, and they bear a greater burden of partial immunization and zero-dose children (ZDC).

Women, who ideally should be at the forefront of health service utilization, are disproportionately disadvantaged. They often lack agency in health and economic decision-making and are tied to household responsibilities, childcare, and livestock management. Husbands wield greater decision-making and economic power, which can either promote or undermine access to child immunization. The immunization schedule is also demanding, requiring almost monthly visits during the first months of a child's life. Following the schedule requires literacy; in some cases, husbands may be able to interpret it. However, the diseases being vaccinated against are not well understood, and the benefits and risks are poorly communicated. As children often appear healthy regardless, the urgency of vaccination may not be fully appreciated.

### 7.1 Next steps:

Given the breadth of evidence underpinning low immunization coverage, the consultancy planned to validate the findings and narrow down the specific factors driving low coverage among the urban poor, IDPs, rural farming communities, and nomadic pastoralists. Findings from qualitative focus groups were intended to inform insight generation, ideation, and prototyping.

# DISCOVER

## Qualitative Research

Empirical research was essential to address knowledge gaps remaining after the literature review, particularly in complex public health challenges such as low immunization coverage and zero-dose children. While existing reports and secondary data provided a strong foundation, some were outdated, incomplete, or insufficient in explaining local realities and emerging barriers.

There was a need for fresh, real-field, context-specific evidence to validate assumptions and uncover new insights. This helped identify which populations were being missed, why services were not reaching them, and how health system, geographic, and socio-cultural factors interact to limit uptake. By producing real-time and localized data, empirical research provided a more accurate picture of underserved communities.

Rapid qualitative research was conducted in three regions with the lowest coverage to generate practical insights into behaviors, perceptions, and lived experiences not captured in quantitative data. Focus group discussions (FGDs) and observations helped uncover caregiver concerns, misinformation, gender dynamics, trust in health services, and barriers faced by nomadic and hard-to-reach populations.

These insights were particularly valuable for informing the Human-Centered Design (HCD) process. By listening directly to communities, the research ensured that immunization programs would be grounded in lived realities, enabling more adaptive, culturally appropriate, and effective solutions to increase coverage and reach zero-dose children.

# 8

# EMPATHY PHASE Qualitative Research Findings

### 8.1 Background, methodology and sample

The inception phase desk review showed that both zero-dose children and defaulters are concentrated in marginalized, hard-to-reach, or underserved communities such as nomadic populations, the urban poor, and internally displaced populations.

The inception phase clearly indicated the need for primary data to deeply understand the factors driving low immunization coverage in these target groups. ZDC data showed the highest prevalence in high-population regions, particularly Marodijeh, followed by Awdal and Togdheer.

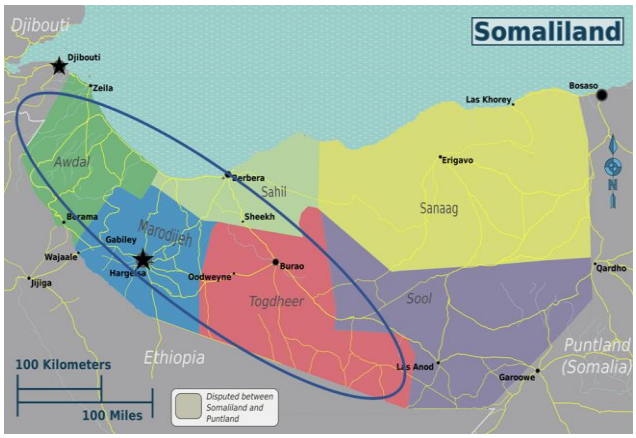


*Figure 8: Map of Somaliland*

Three regions were selected for primary qualitative research to generate insights. Selection was based on low immunization coverage, logistical feasibility, security considerations, and geographic variation to ensure a reasonably representative sample of Somaliland.

**Selected areas and sample composition:**

- **Marodijeh (Hargeisa)** – Urban poor (urban IDPs):
  - 1 male FGD
  - 1 female FGD
  - 1 female youth FGD
- **Awdal (Borama)** – Urban IDPs and rural farmers:
  - 2 male FGDs
  - 2 female FGDs
- **Togdheer (Burao)** – Rural IDPs:
  - 1 male FGD
  - 1 female FGD
  - Nomadic pastoralists: 3 female and 2 male in-depth interviews

In-depth interviews were used among nomadic pastoralists in Togdheer because it was difficult to assemble large groups.

## 8.2 Assessment Methods and Limitations

Qualitative data were collected using locally trained moderators who conducted discussions in the Somali language. Translation into English was provided to the lead researcher. Conducting groups in rural communities required significant adaptation to local settings and environments. Some discussions were held in buildings, others under trees, and others in government health centers.

The presence of the research team generated interest, leading some groups to exceed the planned size of eight participants.

Although translation was provided in English, some nuances of Somali language and culture may not have been fully captured, potentially limiting the depth of contextual interpretation.

A semi-structured discussion guide was used, and handwritten notes formed the basis of the analysis. Consent was obtained from participants for both participation and photography.

## 8.3 Immunization Knowledge

Immunization was not a new concept for participants. It was generally understood as a service that promotes health through disease prevention. Among urban poor women, participants emphasized the importance of

immunization for both expectant mothers and children, believing that good maternal health leads to better child health.

There was variation in knowledge of specific diseases prevented by vaccination, with measles, chickenpox, and polio most frequently mentioned—likely because respondents had witnessed outbreaks of these diseases in their communities.

However, beyond basic awareness, most men lacked deeper knowledge of immunization. They were generally unfamiliar with specific diseases prevented, the number of vaccines required, or the immunization schedule. Poor understanding of immunization among men is a significant concern, contributing to low coverage. This limited knowledge appears to be influenced by gender norms, educational attainment, and socioeconomic factors.

*"A child has to be vaccinated every six months for five years" (Male, Hargeisa, Urban poor)*

Men, however, understand the importance of maternal health and allow their wives to seek antenatal care and deliver in health facilities, especially among the urban poor and urban IDPs. Due to the high incidence of postpartum hemorrhage, men have increasingly embraced nutritional support, antenatal care, and in-facility delivery. They also support household responsibilities—either directly or by supervising older children—during the period when the mother is away at the hospital for delivery.

A few cases of resistance to immunization were observed, mainly related to fears of fever, concerns that expired vaccines could cause disease or paralysis, and general mistrust.

### 8.4 Family Social Dynamics in Immunization Service Uptake

Family social dynamics influence immunization uptake in two main ways:

**1. Gender Roles**

Men have low involvement in immunization matters within the family. Although they understand that immunization prevents disease, they regard it as the mother's responsibility to follow through. Mothers manage the immunization process end-to-end—that is, they receive information, plan, inform their husbands, and take the child to the health center.

> "I manage immunization of my children but from a high level." *(Male, Burao, IDP)*

> "My wife always asks for permission, and I give her permission all the time." *(Male, Borama, IDP)*

**2. Finance**

Men in IDP camps have mostly lost their livestock due to drought, are often unemployed, and have precarious livelihoods. Many depend on remittances from relatives in urban centers. Their priority is often rebuilding livestock herds. Money for transportation—and sometimes user fees at health centers—is the biggest challenge for many families.

Women typically inform their husbands a day before a scheduled immunization visit and request financial support. In most IDP and urban poor households, however, there are no readily available funds. When finances are lacking—and this is often the case—children miss immunization appointments. Across all regions, women reported that men do not treat immunization with the seriousness it deserves.

Lack of finances also undermines male authority in the household by challenging traditional expectations of men as primary providers. This may lead to feelings of inadequacy, diminished influence in decision-making, and increased stress that strains relationships. To cope with this inadequacy, some men may downplay the importance of child immunization, arguing that children are not sick and that immunization is not an emergency. In contrast, when a child becomes ill, men are more likely to mobilize resources for treatment.

Looking at the two factors together, it is no wonder that a significant number of women have stopped involving their husbands in the subject of immunization. Financial pressures lead to frequent arguments and communication breakdowns between partners and mothers are increasingly getting the children vaccinated without their husbands' knowledge.

*"I don't consult my husband on immunization because of his ignorance, I just take the child when the day comes" (Female, Rural Borama)*

### 8.5 Immunization – A health service on 'auto-pilot"

It was also unanimously reported that immunization services often lack clarity regarding which child should receive which vaccine, when, and at what location. Most households do not have a strong literacy culture to effectively track immunization schedules. Mothers frequently rely on their husbands to read the next appointment date on the immunization card, which mothers then try to memorize. For mothers living near health centers (urban poor and urban IDPs), keeping up with the schedule is relatively easier. However, in areas where immunization sessions must be announced periodically, adherence to schedules is often compromised. The situation is more challenging in nomadic pastoralist settings. Immunization cards are frequently lost, and in the absence of a reliable child registration database, many children miss vaccinations.

A supply-driven immunization strategy has, in some cases, reduced family agency, with some households attending immunization sessions primarily when additional incentives are provided. For example, in Hargeisa, it was observed that some mothers attended immunization sessions when they were certain of receiving nutritional supplements.

### 8.6 Vaccine Stock-Outs

Taking a child for immunization is a significant investment. Mothers must secure funds for transport, and when unsuccessful, many walk long distances to health centers—often spending a substantial part of the day traveling.

The greatest disappointment occurs when, after this effort, they are told that vaccines are out of stock and they must return another day. The situation worsens when no clear explanation or future date is provided. When this happens, an opportunity to immunize the child is lost, and mothers become discouraged from returning.

### 8.7 Quality of Service

It emerged clearly that there is a lack of empathy among some health facility staff, often reflected in how they communicate with service seekers.

Some mothers reported feeling belittled or disrespected.

The physical setup of facilities is also uncomfortable. In many cases, mothers wait for services sitting on the floor or under the sun. Of the five health centers visited by the research team, only one had a shaded sitting area, and it was still under construction (Caaqil Yare Health Center, Burao).

### 8.8 Higher income families and immunization:

Interviews with youth from higher-income households indicated a lower level of immunization acceptance. These families believe that vaccines—especially those used in mobile outreach—are not of acceptable quality. They suspect that vaccines are not properly preserved in cold storage and fear that they may harm children.

Such families tend to prefer curative services, resulting in their children missing routine EPI vaccinations. They believe that, given their higher income, curative services are accessible when needed. When immunization is required, they prefer to vaccinate their children while traveling abroad.

A significant number of youth participants observed that these higher-income families have experienced cases of diseases that are otherwise preventable through the EPI program. Urban poor families also reported that they rarely see higher-income families attending local health centers for immunization. This observation reinforces the perception that vaccines provided locally may not be safe.

### 8.9 Proximity to health services:

Even when families are receptive to immunization services, distance to health facilities can be prohibitive.

> "Here, our nearest location is Borama, which is about 20 km away. The other nearest facility is Dilla, which is 12 km away. And since that health facility is private, we have to pay for immunization." *(Female, Borama Rural)*

Without money for transport, many children in such settings miss immunization. The farther a household is from a health center, the higher the probability that a child will be zero-dose.

### 8.10 The specific context of nomadic pastoralism:

For nomadic pastoralists, access to health facilities is the greatest challenge due to long distances and residence in areas not served by public transport. Additionally, most children are born at home, missing the opportunity for neonatal immunization.

*"All these five children I have were born at home, but they were vaccinated when I went to town for another reason and I heard that there was going to be a children's vaccination the following day."*

*(Female, Nomadic Pastoralist, Togdheer)*

Nomadic families are generally aware that vaccines are available at health facilities but often report having no time to travel there. Information about immunization is usually received by chance,

and there is no reliable, consistent source of health information. When immunization campaigns are conducted in nearby towns and information does not reach them, children miss the opportunity to be vaccinated.

They would not consider selling livestock to obtain transport money for immunization; instead, they would seek alternative sources of income. Visiting a health facility is not necessarily problematic in terms of household responsibilities, as community members can help care for livestock in their absence. However, when cash is unavailable—and livestock will not be sold for transport—immunization opportunities are easily missed.

Going to a health facility is never a problem if they want to, because since they live in a community, they would easily find another member of the household to take care of their livestock while they are away. When money is not available, and since they would never sell livestock for transport money, an immunization opportunity is easily missed.

### 8.11 Influencers in vaccination uptake:

Peers and women leaders play a strong role in influencing vaccination uptake. In some cases, they strongly encourage or pressure reluctant mothers to immunize their children. When a woman does not vaccinate her children, peers often become aware and may educate and persuade her to change her behavior

# 9

# Overall Insights

### 9.1 Definition of an insight.

An insight is a discovery about deep-seated fears or motivations that influence people's behavior. The experiences people go through create emotional perceptions, and when these perceptions are linked to harm, people tend to avoid those experiences. Conversely, when emotions are positive, engagement with the experience is enhanced.

In this chapter, we examine how both realities and perceptions about immunization—and the accompanying service delivery—have influenced user behavior, whether negatively or positively.

### 9.2 Awareness of immunization.

Awareness of immunization and its benefits is high across the board. The concept of immunization as a preventive measure against disease gives parents confidence that vaccines can be trusted. The visible and permanent effects of polio, for example, were frequently cited as evidence of the value of immunization. Awareness is the starting point in the immunization journey and must be built using tools and channels that people trust. In Somaliland, trusted channels include community meetings. Social relationships build trust and significantly influence behavior.

### 9.3 Distance to service point.

The configuration of population settlements makes access to services relatively easy for some and extremely difficult for others. The urban poor, urban IDPs, and those living near health facilities have comparatively easier access. In contrast, agro-pastoralists and nomadic pastoralists who live far from health centers face disproportionately higher barriers to access. When the challenges people face align with their competencies and abilities, they may experience a state of "flow"—a mental state of complete absorption, focus, and enjoyment in an activity, where skills match the challenge of the task. Coined by Mihaly Csikszentmihalyi, flow is characterized by energized focus, full involvement, and deep satisfaction. The absence of flow can result in boredom, anxiety, or apathy, depending on the balance between skills and challenges. In the context of immunization, significant apathy is observed in rural agro-pastoral, rural IDP, and nomadic pastoralist areas, where barriers outweigh perceived ability to overcome them.

### 9.4 Dignified service.

Human dignity is a fundamental need essential for psychological well-being, self-worth, autonomy, and social connection. When dignity is denied, it can lead to mental and emotional distress. When users visit health centers that lack seating or shade, and when health workers communicate without empathy or respect, service utilization is discouraged.

### 9.5 User-friendly immunization schedule cards.

The existing immunization cards are overly technical and do not appear valuable or user-friendly. The schedule is structured in a highly clinical manner and is not easily understandable or appealing to parents with limited literacy.

### 9.6 Human resources for health: The challenge of moral dilemmas, motivation and performance management.

Healthcare workers are human beings who face moral dilemmas in the course of their duties. In Somaliland, they must balance responsibilities, professional values, and limited resources—often leading to moral distress when they cannot act ideally.

For example, choosing between OPV and IPV, despite differences in antigens, may become influenced by operational convenience and emotional ease. Searching through paper registers to identify the correct client and antigen—especially when the caregiver has not maintained the immunization card—may lead providers to rely simply on the child's age and administer the antigen typically scheduled for that age.

Secondly, healthcare workers are employees influenced by organizational culture and systems. Human resource policies must consider human behavior and motivation to optimize workplace effectiveness. This includes decisions regarding recruitment, training, supervision, incentives, leadership, and overall workplace culture—creating mutually beneficial outcomes for both employees and the organization.

There is also a widespread perception that some immunization providers lack competence, as they appear uncertain about which antigen to administer and how. Whether accurate or not, this perception represents a critical issue that must be addressed urgently.

### 9.7 Supply chain inefficiency and impact on user behavior.

Vaccine stock-outs and multi-dose vial policies are supply chain challenges that discourage service utilization. For many caregivers, accessing

a health facility requires overcoming significant barriers—distance, opportunity costs, obtaining a husband's permission, and securing financial support. When services are unavailable after such effort, disappointment discourages future health-seeking behavior. It is difficult for communities to understand why vaccine stocks cannot be effectively tracked through an information system.

### 9.8 Reliable information system.

The immunization schedule is often rigid, with services offered only on specific days. This rigidity does not align well with real-life constraints. A mother may be unavailable on the designated day, lack financial resources, or face long travel distances. In some cases, by the time she arrives, service hours have ended. The proposal is to make vaccination as accessible as curative services, including offering afternoon sessions in MCH centers.

### 9.9 Wider vaccine availability time window.

The immunization schedule tends to be rigid in the sense that immunization is done on specific days. This does not align well with human behavior because a mother may be constrained on the day of immunization or may lack the resources necessary to get to the vaccination center. Distance may also be long such that by the time the mother reaches the center the time for offering services has lapsed. The proposal is to make vaccination as available as curative services including in the afternoons for MCH centers.

# 10

# Prototyping

Prototyping is the process of creating and testing early, small-scale versions of a solution in order to quickly learn what works, what does not, and how to improve it before full implementation.

This stage was collaborative and brought together partners from UNICEF, World Health Organization, Save the Children, and the Ministry of Health Development for a full-day evidence review and low-fidelity prototype creation session held on 14 December 2025 in Hargeisa.

*Figure 12: Prototyping session in Hargeisa*

After the prototypes were developed, rapid iteration was carried out in Gabiley targeting rural farmers and rural IDPs; in Hargeisa targeting the urban poor and urban IDPs; and in Burao targeting nomadic pastoralist communities. Focus group discussions were used to gather feedback from respondents on the paper-based prototypes. The evidence collected was then used to refine and improve the designs.

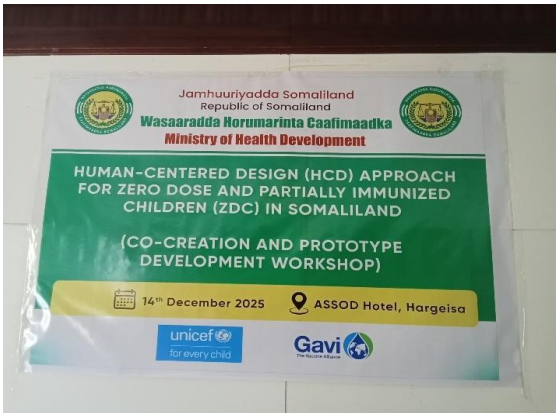


*Figure 13: Prototype testing and iteration*

The following are the prototypes that now require field testing.

From the insights, it became clear that there are universal human truths that must be addressed regardless of demographic group or geographic location.

### 10.1 Efficient Supply Prototype.

This prototype focuses on the supply side and aims to make service centers competent, efficient, and user-friendly. It has nine components:

1. **User Education:** Communities to be educated about the immunization schedule, emphasizing the number of antigens included (without necessarily using scientific names) and vaccine safety.

2. **Access:** Service centers should be reasonably close to where people live. Where populations are distant, services should move closer through outreach, with advance communication to allow for planning.
3. **Good Customer Service:** Staff to be trained to provide friendly, respectful, and dignified care.
4. **Supply Efficiency:** A computerized, real-time stock monitoring system at health centers.
5. **Computerized Child Tracking System:** A digital information system that identifies all children, records the antigens received, and tracks upcoming doses to support follow-up and reduce missed vaccinations.
6. **Staff Competency:** Refresher training on immunization practices.
7. **Increased Vaccine Availability Window:** Vaccines to be available every day, including afternoons.
8. **One Child, One Vial Policy:** Elimination of the multi-dose vial policy to ensure that each child can receive vaccination immediately without postponement.
9. **Quality Supervision and Accountability:** A system for monitoring staff performance and ensuring accountability.


*Figure 14: Efficiency in supply prototype*

### 10.2 Feel good mothers' prototype.

This prototype applies to urban settings and is particularly suitable for the urban poor and urban IDPs. Beyond supply efficiency, these groups are strongly influenced by the quality of their experience at the health facility. Key areas of emphasis include:

1. **Integrated Services:** Preference for integrating child immunization with child nutrition services and maternal health services, such as postnatal care, gestational diabetes screening, and eclampsia monitoring.
2. **User Education:** Increased knowledge about vaccine safety, particularly regarding new vaccines.
3. **Access:** Expanded mobile service delivery.
4. **Good Customer Service:** Staff trained to provide friendly, respectful, and dignified care.
5. **Staff Competency:** Refresher immunization training for health workers.
6. **Comfortable Waiting Areas:** Adequate seating and comfortable environments at health facilities.


*Figure 15: Quality of service prototype*

### 10.3 Rural: Male involvement and flexibility.

This prototype applies primarily to rural agro-pastoral and IDP communities. In these settings, mothers often face resistance from their husbands, particularly regarding financing travel to health facilities.

Their areas of emphasis include:

1. **Male Involvement:** Husbands should be educated about the importance of immunization and their responsibility to provide financial support, grant permission when required, and assist in managing common side effects such as fever.
2. **Access:** Expansion of mobile services or establishment of facilities closer to communities.
3. **Increased Vaccine Availability Window:** Vaccines to be available every day, including afternoons, to accommodate varying schedules and resource constraints.


*Figure 16: Male involvement prototype*

### 10.4 Nomadic Pastoralist prototype.

In more remote rural and pastoral settings, families rarely travel to town, often going only once every three to five months. They typically access goods through traders who visit them by camel.

For these communities, key areas of emphasis include:

4. **Computerized Child Tracking System:** A digital system that registers children, uniquely identifies them, records the antigens received, and tracks upcoming doses. Given their mobility and infrequent visits to town, follow-up should include telephone outreach to remind caregivers of scheduled immunizations.
5. **Synchronization with Livestock Programs:** Immunization services should be coordinated with activities of the Ministry of Livestock. Communities expressed a preference for offering child immunization services on the same days as animal vaccination campaigns, leveraging existing gathering points and high attendance.

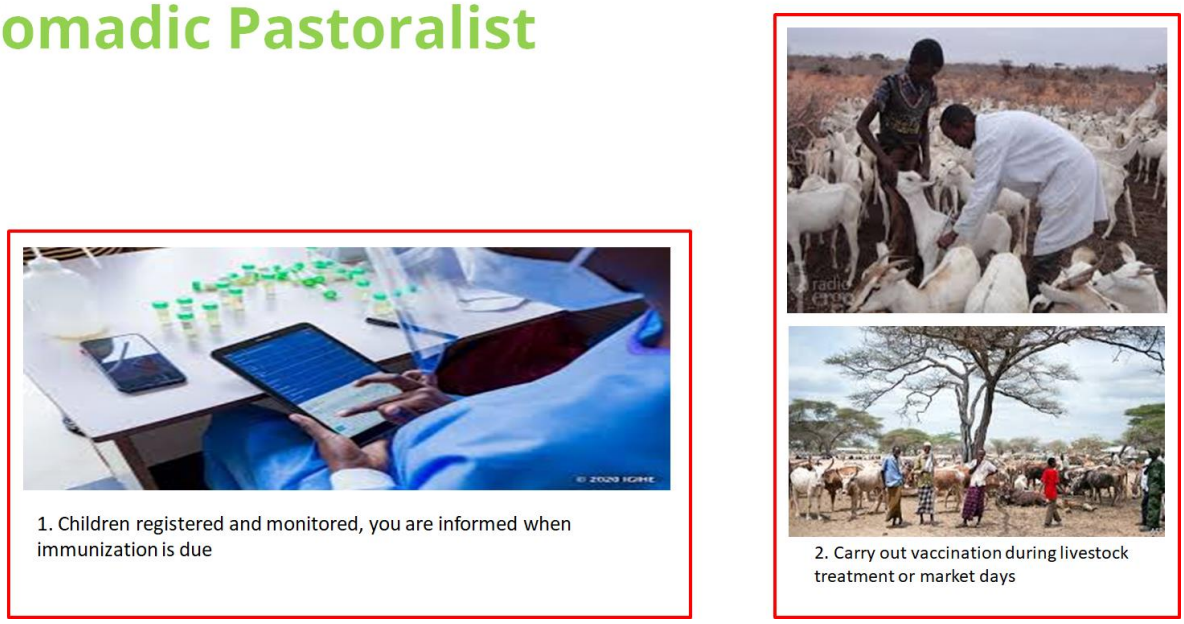


*Figure 17: Nomadic pastoralist prototype*

# 8

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