



**TechNet-21**  
The Technical Network for  
Strengthening Immunization Services

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# Reaching Zero-Dose Children: Remote rural settings

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# Zero-Dose Strategy

- **Objective: identify and regularly reach children that didn't receive any vaccination through routine services (unimmunized)**
- **Entry point to achieve immunization equity goals**
- **Proxy indicator at global/national level: lack of DTP1**
- **Number of zero dose children =  $(100 - \text{DTP1}) / 100 * \text{surviving infants}$**
- **“Zero-dose communities” (large proportion of zero-dose children): neglected and marginalized populations**



REMOTE RURAL



URBAN



AFFECTED  
BY CONFLICT



GENDER

# Join the community

[www.zero-dose.org](http://www.zero-dose.org)

## Zero-Dose Community of Practice

The Zero-Dose Community of Practice is a platform for experts striving to reach zero-dose children with life-saving immunization. Join us to learn, discuss, share, connect and be inspired. Together, we can achieve the ambitious goals of the [Immunization Agenda 2030](#) and [Gavi 5.0](#).

[Join the Community](#)





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# A cost-effective approach to map clusters of zero-dose children in Cameroon: QGIS analysis

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# Outline

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**Results and key considerations for the future**

# Case for Action



Six urban districts- 358 slums identified

903 (33%)  $\geq$  9 months under-vaccinated, and 378 (14%) zero-dose children.

One Rural district- 47 islets

854 (31%) zero-dose children were identified in an archipelago district (Manoka).

>1000 zero-dose children were found in these city slums and archipelago rural district. This implied that there may be many more similar missed communities in Cameroon. However, considering the limited health resources in the country, there was a resounding need to identify and prioritize communities for high impact action.



## Objectives

- 1. Improve the identification of health areas with clusters of zero-dose children 'trapped' in missed communities using composite scores.
- 2. Gain insights on characteristics of health areas with missed communities.
- 3. Support Cameroon EPI to prioritize health areas to reach zero-dose children.

# Methodology

**The traditional head counting approach will require over a million USD to identify and prioritize health areas with zero-dose clusters.**

Generating scores that can be used as a proxy for the probability of finding zero-dose children in a community - QGIS software used

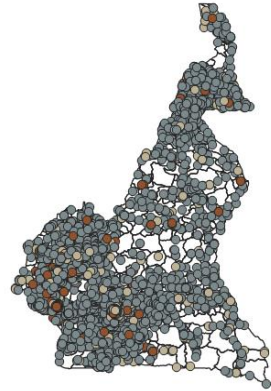
Identification and ranking of 100 Health areas with missed communities based on high-impact criteria.

Prioritization and characterization of 20 Health Areas

Indicators	Proxy	Description	Weights
A	High proportion of unvaccinated with DPT-1	Percentage of children without DPT-1 in health area	3
B	Hard-to-reach settlements in rural areas	Area (km <sup>2</sup> ) of small settlements within health area that fall outside 15km of facilities providing vaccination services	2
		Area (km <sup>2</sup> ) of hamlets within health area that fall outside 15km of facilities providing vaccination services	2
C			
D	Location of high-risk areas in Yaoundé	Area (km <sup>2</sup> ) of built-up areas within health areas that fall outside 1 km of health facilities providing vaccination services	2
E	High area of hard-to-reach locations in urban areas	Area (km <sup>2</sup> ) in Yaoundé health areas covered by slum or new settlement.	1

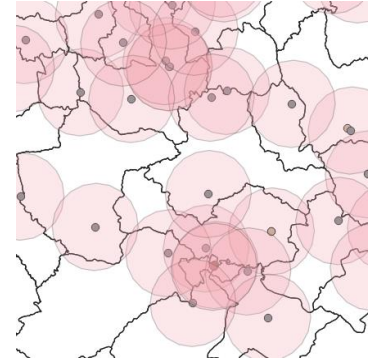


# Illustration: Identifying hard-to-reach communities

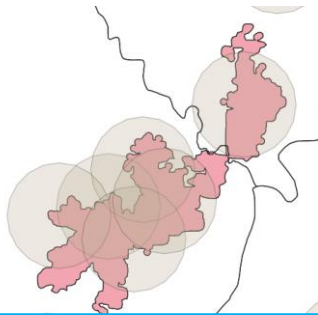


Localization of vaccinating health facilities

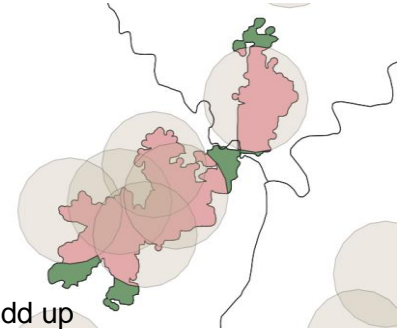
Estimation of 15km perimeter around the health facilities



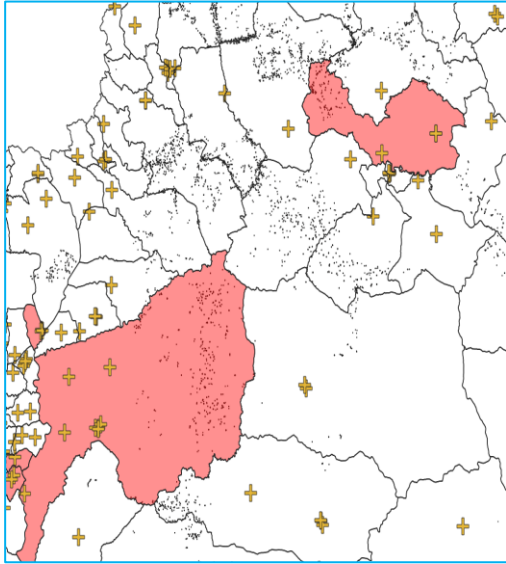
Superimpose the catchment area on the location of the houses.



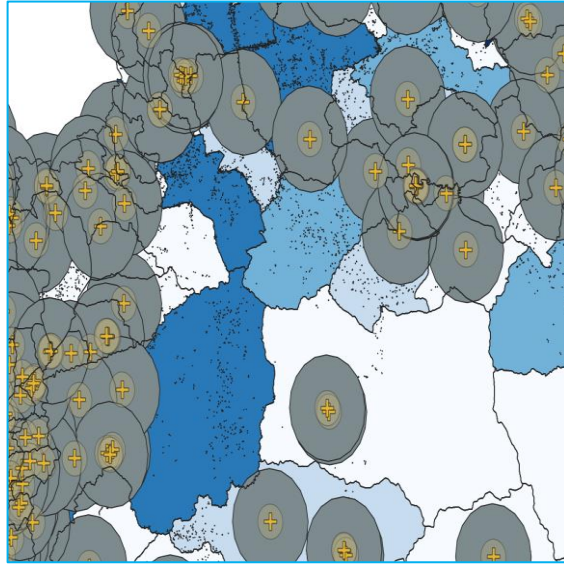
Identify the areas of dwellings beyond 15 km and add up the total surface area in the administrative unit.



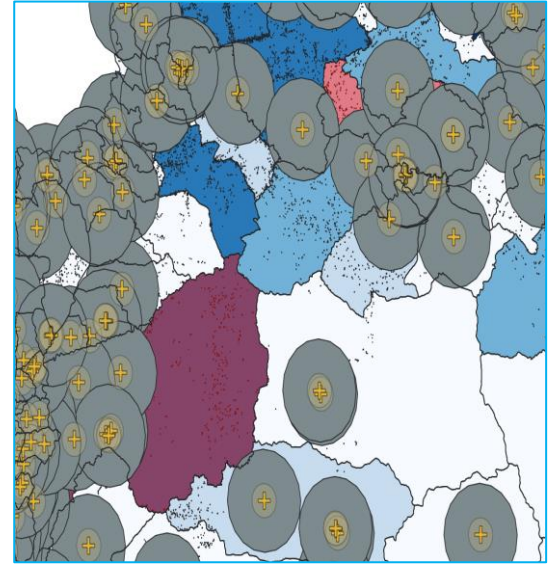
# Illustration: generating the data composite score



In pink we have the administrative unit with low DPT-1 coverage



In blue we have the difficult to access areas (the darker the more difficult to access areas)



In purple, we have the most likely administrative units to have multiple Zero-dose children.

# Results – Mapping and characterization



## Urban and Rural Health Areas

Zero-dose score

Rural scoring [1819]

0.00 - 0.17 [752]

0.17 - 0.33 [680]

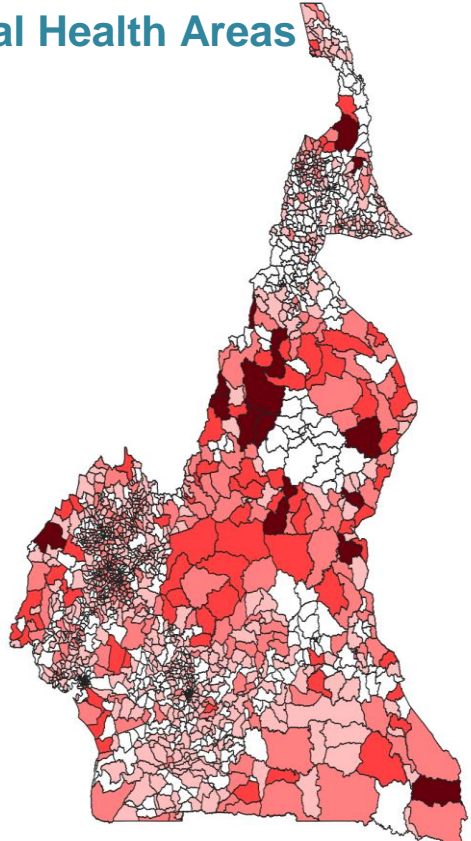
0.33 - 0.50 [304]

0.50 - 0.66 [68]

0.66 - 0.83 [15]

Health Area boundaries

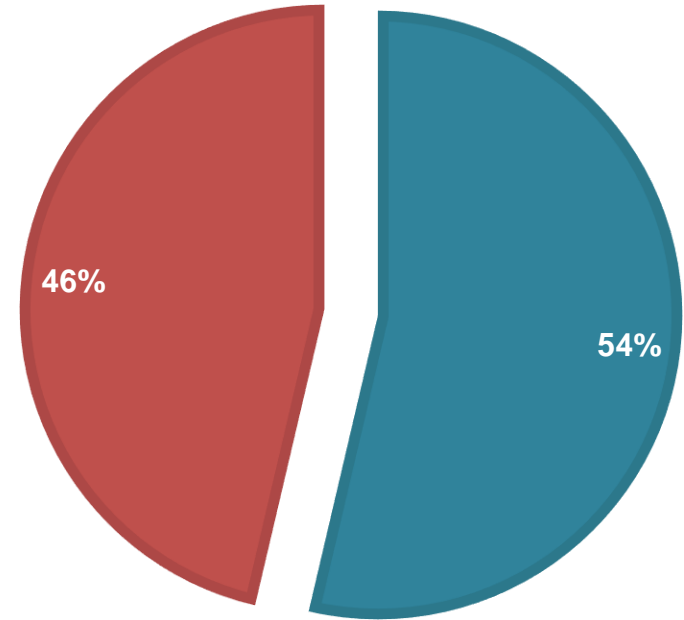
0 100 200 km



## Villages (520 in 20 priority health areas)

■ Covered by HFs

■ Not covered by HFs



# key considerations for the future



## Zero-dose proxy in urban setting

- Other indicators such as SES of neighbourhoods, transportation cost to nearest facility, time to nearest facility will improve missed community identification in urban settings.
- Slums and new settlements were captured only within Yaoundé, and future work could gather data from other metropolitan areas.

## Master facility list

- The ability to identify the location of health facilities with immunization services required manual merging of information based on facility name. In the future, generation of a master facility list or ID would save time.

## Better characterization of missed communities

- Include data on the availability and distribution of CCE, and Human resources in the mapping process to orient intervention designs.
- Utilize more detailed HCD/BeSD approaches to characterize missed communities to better understand the drivers of zero-dose.



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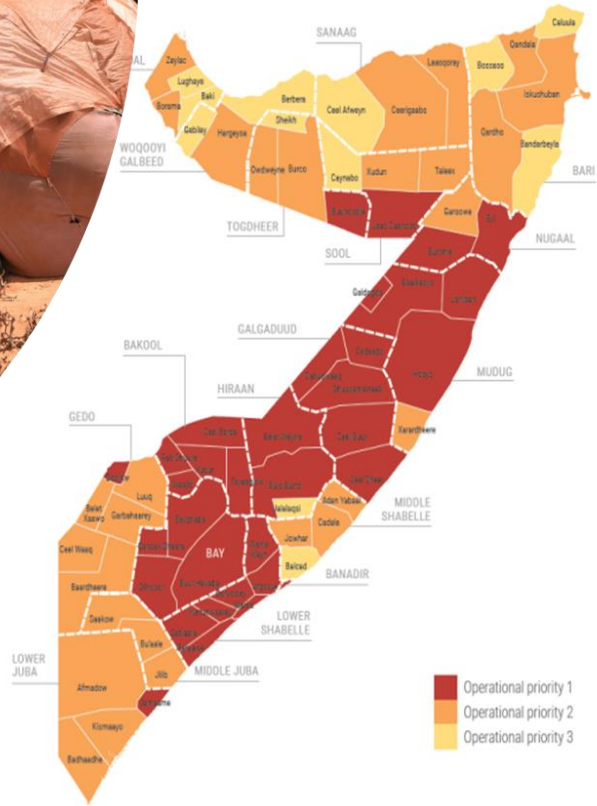


# Accessing and vaccinating drought affected communities in Somalia

Mukhtar ABDI Shube, EPI manager, Federal Ministry of Health, Somalia  
Muhammad Farid, Medical Officer, WHO Somalia



- Somalia is facing multidimensional challenges, and for the last couple of years, progress has been made, despite recent droughts, conflicts, and disease outbreaks have undermined this progress.
- Climate change also impacted Somalia and is expected to induce widespread displacement, rapid urbanization, food insecurity, and increased poverty.
- There has been a long-standing conflict for three decades. Recently, Due to the political tensions over delayed elections earlier this year have caused conflicts and started cycles of displacement, disruptions to livelihood activities, and restrictions on trade and humanitarian access.
- COVID-19 has also impacted the country's fragile health systems and set back improving trend of the last couple of years regarding health services delivery



# Drought Situation in Somalia



- Droughts and natural disasters occur in Somalia frequently, and recently, the country was hit by droughts due to the slim of the anticipated rainy seasons for the fourth consecutive year. This has created food insecurity and water scarcity.
- ✓ Almost 55 percent of Somalia is already affected by severe drought.
- ✓ 7.8 million people have been affected by the severe drought as of July,
- ✓ More than one Million are displaced from their homes.
- Since January to June, the admission rate of severe malnourished cases increased by 48% compared to the previous year.



# Drought Response Activities



Integrated Outreach Teams

Humanitarian partners have started response activities prioritizing the most vulnerable people in severely affected districts.

OCHA estimated 74 districts affected by the droughts.

Answering the call of the Somalia government and the people of Somalia, FMOH and WHO started to reach families in direst need with emergency life-saving support.

Integrated outreach teams were deployed in 39 severely affected districts.

The teams are assigned to deliver a package of interventions.

- **101** integrated outreach teams deployed composed 5 persons each.
  1. Routine immunizations and Vitamin A
  2. Nutritional screening, ORS and deworming
  3. Provide COVID-19 vaccinations
  4. OPD consultations for Under five and over five children
- Close 2000, community health workers were deployed to provide awareness to the communities and refer children to vaccination sites for routine immunization.





# Integrated outreach teams

## Routine Immunization

- In collaboration with federal and state ministries, integrated outreach teams provided routine immunization as per the national EPI policy. Since start of the outreach response in March 2022, more than 57900 zero-dose children were identified and vaccinated. Also, community health workers are deployed in these affected districts to give awareness, surveillance, and linking the community to HF

- BCG:	31,882
- Penta-1	57,958
- Penta-3	47,976
- IPV-1	43,620
- IPV-2	31,502
- MCV -1	59,950
- MCV-2	39,125
- Td-2	21,939

- Selection of appropriate team members
- Microplanning
- Team deployment
- Data management
- Ensure supplies
- Supervision and monitoring





# Accelerated routine immunization activities

- ❑ 12 low performing districts in three states
  1. Galmudug – 2 districts
  2. Hirshabelle – 2 districts
  3. BRA – 8 districts
- ❑ A total of 125 teams deployed for 16 days for three months to boost the immunization coverage in these districts.

- Data analysis
- Microplanning
- Team deployment
- Supervision

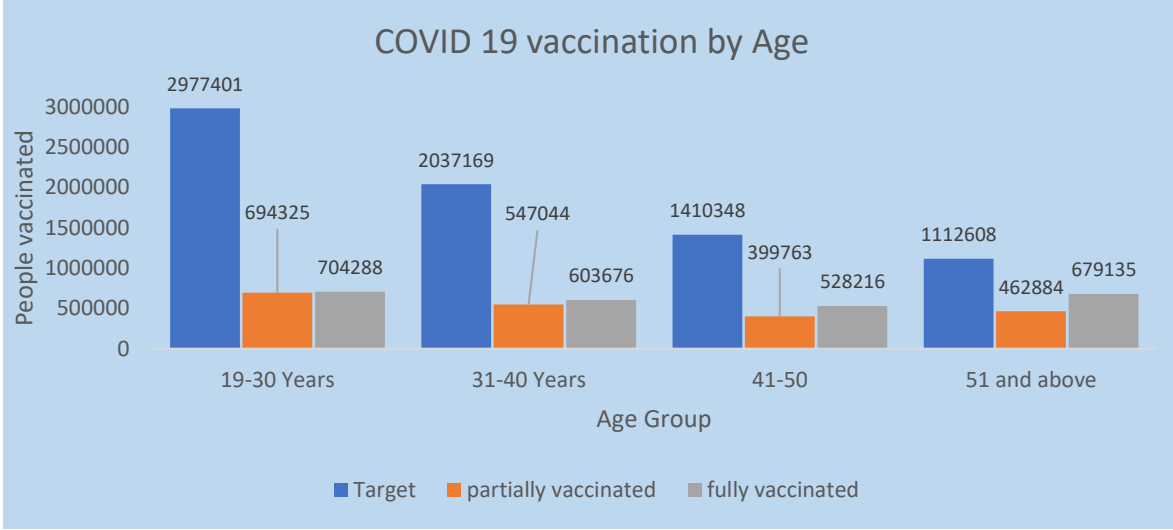
- ❖ BCG: 2194
- ❖ Penta 1: 4122
- ❖ Penta 3: 2373
- ❖ IPV: 3691
- ❖ MCV: 1926





# Adult vaccination – COVID 19 and Cholera

- COVID-19 vaccination is ongoing in Somalia, although the demand is not high, so far, close to 5,1 million doses have been administered.
- 18.8% fully vaccinated
- 55% are male
- Two round of OCV has been conducted in 9 districts – vaccinating close to 1 million people

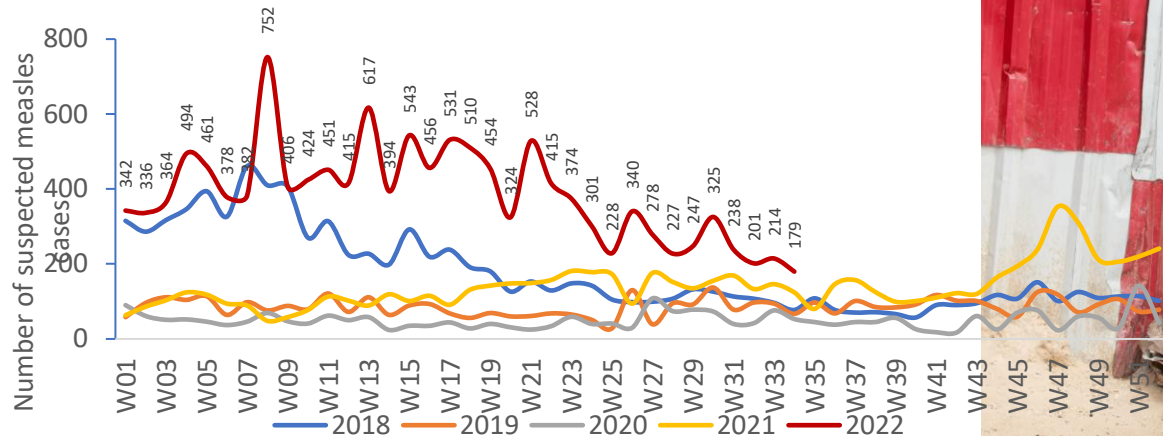




# Health Threats in Somalia

WHO and UNICEF provided support to Federal and state ministries of health conduct measles response activities to reported cases. More than 1,2 million children aged 6-59 months received additional dose of measles vaccine and vitamin A across the country.

Trend suspected measles cases by weekly from 15- 20 Aug 2022





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# What works to reach remote rural and nomadic populations: lessons from JSI's UI-FHS project in Ethiopia

Lisa Oot, Senior Technical Officer, JSI

# Zero-dose and equity issues in Ethiopia



**Two-thirds** of the world's zero-dose (or unimmunized) children live in just five countries, including Ethiopia <sup>(1)</sup>



**Underimmunization** (not receiving all doses of all antigens) and delays in timely immunization are also significant challenges



In the 2019 DHS only **44%** of children received all basic vaccinations

In Ethiopia the largest numbers of zero dose live in remote rural areas; the largest percentage of zero dose live in regions with **large nomadic communities**



(1) <https://www.gavi.org/vaccineswork/zero-dose-child-explained>

2-min video: <https://youtu.be/xR6vlif6GqY>



zero dose children	1	<b>NIGERIA</b>	2,480,00
	2	<b>INDIA</b>	1,403,000
	3	<b>DRC</b>	1,125,000
	4	<b>PAKISTAN</b>	794,000
	5	<b>PHILIPPINES</b>	728,000
	6	<b>ETHIOPIA</b>	691,000
	7	<b>BRAZIL</b>	542,000
	8	<b>INDONESIA</b>	472,000
	9	<b>ANGOLA</b>	399,000
	10	<b>MEXICO</b>	348,000

# RED-QI: A Pro-equity approach



## Planning and Management of Resources

- Use of quality improvement tools
- Inclusion of community and civil administration



## Reaching Target Populations

- Capacity building for mobile/outreach service delivery



## Engaging with Communities

- Community engagement in microplanning
- Quality Improvement Teams (QITs) with community involvement



## Supportive Supervision

- Data-informed planning for supervision
- Iterative, holistic support based on needs



## Monitoring and Using Data for Action

- Use of data through all processes: review meetings, supportive supervision, quality improvement team meetings, etc.



# 1. Engaged community members to build ownership and trust

- Community engagement in microplanning was key enabler to deciding **where and when** to reach underserved populations
- RED-QI approach:
  - Implements a co-creation process to design catchment maps with health workers and community members
  - Community members drive discussion on targets and decide on locations and timing for immunization sessions
  - Uses root cause analysis to identify and solve for underlying reasons for poor access and utilization of immunization services
  - Active engagement of district administration to mobilize resources and elevate issues
  - Is a tool for health managers to monitor progress towards conducting planned sessions





## 2. Provided a mix of service delivery strategies that are tailored to location, including mobile services

- Effective, well-resourced outreach and mobile strategies are **critical**
  - A 2019 analysis of 123 district level microplans revealed that **51% of planned sessions were outreach or mobile** strategies<sup>(i)</sup>, representing **nearly half (47%) of the target population**<sup>(ii)</sup>
- Capacity strengthening and enhanced planning for mobile services, so that local HWs can implement → overcome common barriers of transport, HR needs, cold chain
- Engagement of non-health stakeholders (e.g. local civil administrators) important strategy for local resource mobilization

(i) Fixed: health facility based – often on a schedule i.e., once a week | Outreach: community based sites within a day's reach | Mobile: community based sites that require overnight travel

(ii) Analysis of approximately 75% of districts from 4 project regions

### 3. Facility based Quality Improvement Teams (QITs) for HWs and community members focused on improving both supply and demand for services

- Formed from existing community structures
- QITs use QI tools to identify bottlenecks, seek local solutions and monitor progress → regular engagement/link between community and system
- Examples of QIT activities:



Community outreach in advance of immunization sessions (demand generation through clan heads of nomadic communities)



Follow-up with individuals who have missed immunization sessions (defaulter tracing)



Resource mobilization (i.e. transportation for outreach sessions)

## 4. Invested in a multi-faceted capacity strengthening approach to improve the quality of programming and services

- Focused on supporting HWs ability to design and implement solutions to service delivery challenges
- Provided multiple avenues for capacity strengthening
  - Invest in mentoring and on-job-training through district or region led supportive supervision
  - Other approaches include classroom training; job aids; peer exchanges; self-assessments
- Provided capacity strengthening at all levels (e.g. national, regional, district, health facility) – based on the competencies needed at various levels





## 5. Provided technical assistance at national, regional and facility level

- Health facility = **strengthen service delivery**
  - [Serology survey](#) in 3 RED-QI districts showed more people were reached than before → statistically significant improvement in protection
  - Health facilities' supportive supervision performance scores improved avg. 49%
- District and Regional levels = **strengthen management**
  - Regional Health Bureaus in implementing equity regions scaled microplanning to 75% of districts
- National = **support sustainability through national policies/guidelines**
  - RED-QI microplanning approach incorporated into MOH's National RED Guidelines and other national guideline documents



# Looking forward: What is still needed

- **Sustained financing of the health system that includes community engagement** in health facility based microplanning and QITs
- Consistent financing for expanded service provision. **If outreach and mobile are not resourced, remote populations will be missed**
- Continuing **innovation around data use**. Digitization efforts still have a long way to go and need to be tailored for low-infrastructure settings.
- **Systematic capacity strengthening approaches** to increase resilience of the health care system and job satisfaction
- Exploration of barriers and opportunities **to strengthen primary health care including immunization for all ages** (from infancy through adulthood)
- **Technical assistance support needs to support all levels** and cannot solely be focused on higher levels of the health system.





# Learn more & technical resources

## Learn more & get started:

- 2-pager: [What is RED-QI?](#)
- RED-QI ["How To" Guide](#) for country-level implementers
- Four-part RED-QI course on [Boost](#)

## Website:

- [uifhs.jsi.com](http://uifhs.jsi.com)
  - [Tools & Guidelines](#) page contains many technical resources

## Equity briefs – strategies and recommendations to improve equity and reach zero-dose:

- [Summary brief](#)
- [Community engagement](#)
- [Capacity building](#)
- [Data use](#)



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# Questions & Answers