Strengthening the Routine Immunization System through a Reaching Every Child–Quality Improvement Approach in Uganda

A How-to Guide

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Acronyms and Abbreviations

ACAO	Assistant Chief Administrative Officer
ADHO	Assistant District Health Officer
AEFI	Adverse Events following Immunization
AFENET	African Field Epidemiology Network
ANC	Antenatal care
ARISE	Africa Routine Immunization System Essentials
BMGF	Bill & Melinda Gates Foundation
CAO	Chief Administrative Officer
CCA/CCT	Cold-Chain Assistant/Cold-Chain Technician
CDO	Community Development Officer
CP	Chairperson
CQI	Continuous Quality Improvement
CR	Child Register
CSO	civil society organizations
DCCT	District Cold-Chain Technician
DCDO	District Community Development Officer
DEO	District Education Officer
DHO	District Health Officer
DHIS	District Health Information Software
DHT	District Health Team
DHMT	District Health Management Team
DIT	Data Improvement Team
DOR	dropout rate
DPT	diphtheria, pertussis, tetanus vaccine
DQSI	data quality self-assessment and improvement
DSFP	District Surveillance Focal Person
DTO	District Technical Officer
EPI	Expanded Program on Immunization
FP	Focal Person
HC III	Health Center III
HF	health facility
HODs	heads of department
HMIS	Health Management Information System
HSD	health sub-district
HUMC	Health Unit Management Committee
HW	Health Worker
IPs	implementing partners
IPT	Intermittent preventive therapy for malaria
JSI	John Snow, Inc.
LC1	local council 1

LLIN	long-lasting insecticidal nets
MCHIP	Maternal and Child Health Integrated Program [USAID]
MCSP	Maternal and Child Survival Program [USAID]
MOH	Ministry of Health
NMS	National Medical Stores
OJT	on-the-job training
OPL	operational level
PCV	pneumococcal conjugate vaccine
PDSA	Plan-Do-Study-Act
PHC	Primary Health Care
PNC	postnatal care
QAD	Quality Assurance Department
QI	quality improvment
QIT	Quality Improvement Team
QRM	quarterly review meeting
QWITs	quality work improvement teams
RDC	Resident District Commissioner
REC-QI	Reaching Every Child through Quality Improvement
RED	Reaching Every District
RI	Routine Immunization
RSST	Regional Supportive Supervision Team
SAS	Senior Assistant Secretary
SC	sub-county
SDS	Strengthening Decentralization Systems (USAID-funded program)
SS	supportive supervision
SS4RI	Strengthening Systems for Routine Immunization
TB	tuberculosis
TOT	Training of Trainers
TPC	Technical Planning Committee
UBOS	Uganda Bureau of Statistics
UI-FHS	Universal Immunizations for Family Health Services
UNEPI	Uganda National Expanded Program on Immunization
USAID	United States Agency for International Development
VHT	village health team
VIMCB	Vaccine and Injection Material Control Book
VPD	vaccine-preventable disease
WHO	World Health Organization

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Executive Summary

The ambitious goal of the Uganda National Expanded Program on Immunization (UNEPI)—"to ensure that every child and high risk group is fully vaccinated with high quality and effective vaccines against target diseases according to recommended strategies"—has yet to be achieved, despite commendable increases in vaccine coverage over the last few years. Although the Reaching Every Child (REC) strategy for immunization has been in place for more than a decade, many districts and health facilities (HFs) face challenges in implementing it, partially due to inadequate guidance on *how* to fully and sustainably put REC into operation.

The Reaching Every Child through Quality Improvement (REC-QI) approach combines the full REC strategy and components with quality improvement (QI) tools and techniques, which provide practical methods that allow EPI stakeholders to explore obstacles to REC implementation, to develop possible solutions, and share learning for sustainability and scale-up. It advances REC from a "what-to-do" strategy to a "how-to" approach for strengthening the routine immunization (RI) system.

REC-QI has several key features:

- It strengthens planned and budgeted routine EPI activities, such as micro-planning and supportive supervision; it fits within the existing local government health service delivery system.
- It does not have large additional costs, and it enables effective use of the available resources by addressing the most pressing problems and their root causes first.
- It engages stakeholders that have been overlooked in the past, such as local government leaders.
- It helps managers allocate tasks to the appropriate level.
- It generates data for better decision-making at all levels.
- It incorporates continuous learning and sharing so that lessons learned and feasible solutions can be applied in new settings and to the approach as well.

This guide, based on experience and lessons learned from introducing REC-QI in Uganda and Ethiopia, provides guidance on how to carry out REC-QI. It supplements, but does not replace, the current national REC strategy. UNEPI, hospital, and health sub-district (HSD) staff are the intended users of the guide.

An overview introduces readers to QI concepts in REC-QI and explains how to use various QI tools and techniques. These include, but are not limited to: systems thinking, quality work improvement teams (QWITs), a model for improvement that provides a framework for guiding QI, Plan-Do-Study-Act cycles to test change ideas for improvement, tools for analyzing root causes of problems, and peer learning. It explains how REC-QI processes correspond to REC components.

The guide then outlines in detail *how* to introduce REC-QI in districts. Introduction entails three stages: 1. Orientation, 2. Establish and Strengthen, and 3. Maintain and Sustain, to ensure that health workers (HWs) and leaders understand, appreciate, and adapt the REC-QI concepts into their routine immunization (RI) system. Depending on the district-specific strengths and weaknesses, the estimated time to complete the three stages is 1 to 2 years.

Topics addressed during introduction of REC-QI include: macro-mapping; an enhanced RED Categorization Tool; data quality self-assessment and improvement; micro-planning; QWIT formation and management; integrated quarterly review meetings that include non-traditional stakeholders; community and leader engagement; and more. A section on monitoring and evaluation in REC-QI highlights the importance of assessing how key elements of REC-QI contribute to a stronger routine immunization system and suggests corresponding indicators.

REC-QI shows promise in resolving many of the shortcomings noted in the Comprehensive EPI Evaluation of 2015.[1] It specifically addresses challenges such as: the lack of reliable target population data for carrying out micro-planning and performance tracking at lower levels; inadequate monitoring at all levels; inadequate supportive supervision of lower levels; and limited use of data for informing programmatic action. Adding QI to REC offers an iterative improvement approach for building an immunization system strong enough to sustain high-coverage RI.

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[1]*Uganda Comprehensive EPI, Surveillance, Immunization Financing Review and Post Introduction Evaluation of Pneumococcal Vaccine 23 Feb-6 Mar 2015. Executive Summary, Recommendations and Road Map.* 2015.

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Introduction

Like many countries, Uganda adopted the Reaching Every District (RED) strategy for immunization, introduced by the World Health Organization and partners, in 2002.[2] Adapted to Reaching Every Child (REC) in Uganda, it aims to improve immunization coverage and effectiveness, with a targeted focus on poorer performing districts and health facilities (HFs).In addition, the strategy called attention to the importance of strengthening the routine immunization (RI) system as a way to achieve the goal of the Uganda National Expanded Program on Immunization (UNEPI): "to ensure that every child and high risk group is fully vaccinated with high quality and effective vaccines against target diseases according to recommended strategies."

However, the 2007 RED Evaluation and the EPI Reviews of 2010 and 2015 pointed out that REC was being put into place in principle, but with little in-depth continued focus on its five components at district and lower levels.[3] The same reports also noted challenges in implementing the approach, especially at the HF level. These limitations contribute to problems often found in the EPI program, including regular stock-outs of vaccines, nonfunctional cold chain, irregular supervision, very limited use of data for action, and less-than-optimal community involvement. Guidance on *how* to fully and sustainably implement REC was inadequate.

The Reaching Every Child through Quality Improvement (REC-QI) approach arose as a response to these gaps. REC-QI combines the full REC strategy and components with quality improvement (QI) tools and techniques so that districts and national authorities can learn and implement what it will take to make REC an immunization system-strengthening approach. The purpose of REC-QI is to build the capacity of EPI stakeholders to explore obstacles to REC implementation, to develop possible solutions, and share learning for sustainability and scale-up. It also focuses on methods to sustain the gains made in strengthening RI.

This guide brings together the experience and lessons learned from introducing REC-QI in Uganda and Ethiopia, as well as from global experience in strengthening immunization programs. In Uganda, REC-QI began in 2013, based on earlier work with the Africa Routine Immunization System Essentials (ARISE) project in Masaka District funded by the Bill & Melinda Gates Foundation (the foundation), and implemented by JSI. With support from the United States Agency for International Development's (USAID) Maternal and Child Health Integrated Program (MCHIP) and currently the Maternal and Child Survival Program (MCSP), REC-QI is being introduced in five districts, in collaboration with UNEPI. Together with its "sister project," Stronger Systems for Routine Immunization–Uganda (SS4RI), up to 25 districts throughout Uganda will undertake REC-QI by 2017.

This document provides guidance on how to carry out REC-QI. UNEPI, hospital, and health sub-district (HSD) staff, are the intended users of the guide. The guide does not directly target health workers at lower-level health facilities. Staff of partner organizations and others with an interest in improving and strengthening RI systems may also find it useful. A complementary Training Guide/Package (available from MCSP or MOH/UNEPI) contains sample agendas for activities, facilitation notes, and presentations to use when conducting training associated with REC-QI implementation.

The guide supplements, but does not replace, the current national REC strategy. This is a "living document" and will be revised as new lessons are learned during its use. Comments, feedback, and suggestions for improvement are welcome and should be addressed to the Chief of Party MCSP immunization and SS4RI, Dr. Ssekitto Kalule Gerald, at gssekitto@ug.jsi.com.

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[2]*Implementing the Reaching Every District Approach: A Guide for District Health Management Teams.* Revised August 2008.World Health Organization.

[3]*Uganda Comprehensive EPI, Surveillance, Immunization Financing Review and Post introduction Evaluation of Pneumococcal Vaccine 23 Feb-6 Mar 2015.Executive Summary, Recommendations and Road Map.* 2015. Ministry of Health; WHO et al. *In-Depth Evaluation of the REACHING EVERY DISTRICT APPROACH in the African Region.* 2007. World Health Organization [Uganda RED implementation Evaluation 2007 and the Uganda detailed EPI review 2010 report].

Overview of Reaching Every Child through Quality Improvement (REC-QI)

REC-QI aims to turn REC into an approach that can put all five REC components solidly in place. The five REC components are:[4]

- Planning and management of resources
- Reaching all target populations
- Linking services with communities: partnering with communities to promote and deliver services through regular meetings between communities and health staff.
- Supportive supervision
- Monitoring for action

REC-QI adds very few new activities to REC programming, and all activities are built into existing REC work plans.

QI Concepts, Tools, and Processes Used in REC-QI

Familiarity with QI methods facilitates an appreciation of the value that QI can bring to strengthening RI systems. The basic process, methods, and tools used by REC-QI are common to QI efforts in health care and other sectors throughout the world. However, they have been adapted for the specific context of RI and the health system in Uganda. Descriptions of the methods and tools used in REC-QI follow in the text below.

Definition of QI

A definition of QI is:

"A cyclical process of measuring a performance gap; understanding the causes of the gap; testing, planning, and implementing interventions to close the gap; studying the effects of the interventions; and planning additional corrective actions in response."[5]

Systems Thinking

Sustainable and affordable RI system strengthening is a process of bringing about *changes in a complex system.* A system is made up of multiple components, and the performance of each component is dependent on the performance of the other components. Systems thinking ensures different system components synergistically work to lead to desired products. For example, the enhanced RED Categorization Tool aggregates performance of all HFs in the sub-county to categorize that sub-county's performance. The better performing individual HFs in the sub-county therefore need to support the underperforming HFs to improve the sub-county performance/category. This kind of peer learning about local solutions is integral to overall system strengthening.

Figure 1 below represents a national RI system. Service delivery is at the center of the system—pointing to the fundamental importance of continuously reaching all eligible women and children to fully protect them against all vaccine-preventable diseases (VPDs). Surrounding service delivery are the other system elements, demonstrating their linkages. In addition, there are other systems, e.g., social and welfare or

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[4] *REC [RED] Uganda Health Facility Guide.* No date.
[5] Tawfik Y, et al. *Finding Common Ground: Harmonizing the Application of Different Quality Improvement Models in Maternal, Newborn, and Child Health Programs.* Technical Report. USAID Health Care Improvement Project. Bethesda, MD: University Research Co., LLC (URC). 2010.

Uganda government and the global environment, which influence the EPI system. Another way of describing the EPI system is by describing tche various levels of implementation: national, regional, district, facility, and community, which must operate harmoniously with each other and the other components for the system to be functional. In addition to health system elements, REC-QI deliberately engages stakeholders outside the health system, such as district and local leaders, to enhance the enabling environment for RI. All components need to be constantly adjusted and kept in balance for the system to be able to deliver quality RI. QI methods aid in identifying system elements that need adjusting and in making the changes that can strengthen system functioning.

Figure 1. The Uganda EPI System Components

*including broader Health, Child, Community and Social Welfare System
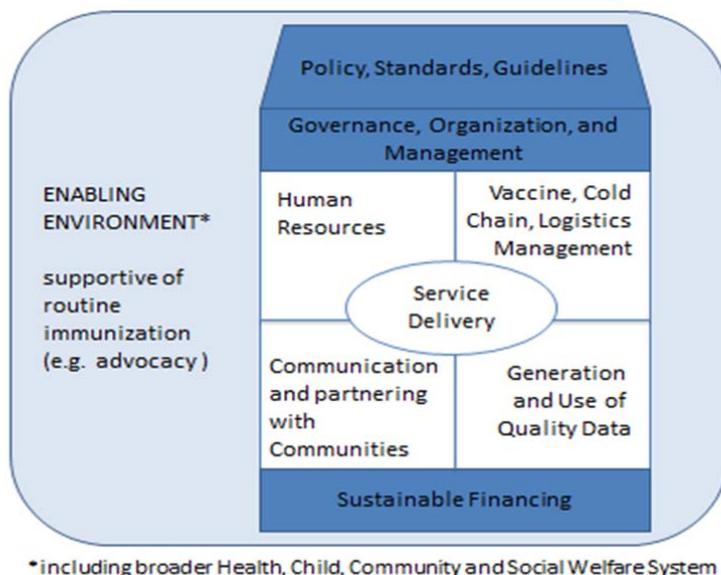
Quality Work Improvement Teams

The Quality Work Improvement Team (QWIT) is a group of people who oversee and perform carefully selected tasks to solve identified problems affecting the specific program. At its core, QI is a team process. A QWIT draws on the knowledge, skills, experience, and perspectives of different individuals within the team to make lasting improvements. QWITs meet regularly to identify and analyze areas in need of improvement, propose solutions, and test the change ideas.

In REC-QI QWITs are formed from existing structures, such as the Health Unit Management Committee (HUMC), village health teams (VHTs), health facility (HF) staff, and local council (LC1), where possible. There are QWIT teams at three levels: at the district and health sub-district (HSD) levels, teams focus on improving management processes and procedures, while at the community/HF level, teams focus on improving service delivery. Before QWITs initiate improvement efforts, they receive orientation to understand their roles and responsibilities and gain familiarity with the methods and tools involved in the QI process. QWITs are specific to programs, e.g., immunization, and they have representative(s) on the general Quality Improvement Team (QIT) for the HF.

Model for Improvement

The Model for Improvement is a framework to guide QI.[6] It is meant to accelerate improvement. The model has two parts (as shown in Figure 2 below):

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[6]Langley GL, Moen R, Nolan KM, Nolan TW, Norman CL, Provost LP. *The Improvement Guide: A Practical Approach to Enhancing Organizational Performance* (2nd edition). San Francisco: Jossey-Bass Publishers; 2009.

- Three fundamental questions, which can be addressed in any order.
- The Plan-Do-Study-Act (PDSA) cycle[7] to test changes in real work settings. The PDSA cycle guides the test of a change to determine if the change is an improvement.

The fundamental questions for improvement

Aim: Improvement requires deciding what a team is trying to accomplish. The aim should be time-specific and measurable. It should also define the specific population or other system that will be affected, based on the identified priority problem.

Outcome measures: Teams use quantitative measures to determine if they are on the path to achieving their aim.

Change ideas. Ideas for change may come from the insights of those who work in the system, from change concepts or other creative thinking techniques, or by borrowing from the experience of others who have successfully improved.

Process measures: Teams use quantitative/qualitative data to verify if: 1) the change took place; and 2) the change is on the pathway to achieving the aim.

Figure 2. The QI Model for improvement

Plan-Do-Study-Act (PDSA) Cycles

The PDSA is a rapid cycle of 1–3 months to test the change ideas that address prioritized root causes of a problem. PDSA cycle is a form of *learning in action*, and a way to achieve learning and *change in complex systems*.

Change ideas are not guaranteed to lead to improvement—they have to be tested. The teams then need to decide if the change ideas should be adopted, adapted, or abandoned. PDSA cycles may also lead to the identification of additional problems and change ideas, which can then be tested through more PDSA cycles. Or, they may suggest that new solutions to the original problems should be tested. The use of the PDSA is cyclical: district, HSD, and HF QWITs conduct repeated rapid PDSA cycles.

The steps in the PDSA cycle are:

P—Make a **plan** of action that includes:
- Objectives
- Predictions about what will happen when the test is carried out
- Who will do what task, when he or she will do it, and how and where
- Responsibilities and plan for data collection.

D—Do (carry out) the plan:
- Implement the "change idea"

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[7]The Plan-Do-Study-Act (PDSA) cycle was originally developed by Walter A. Shewhart as the Plan-Do-Check-Act (PDCA) cycle. W. Edwards Deming modified Shewhart's cycle to PDSA, replacing "Check" with "Study." [See Deming WE. *The New Economics for Industry, Government, and Education*. Cambridge, MA: The MIT Press; 2000.]

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- Document changes, problems, and unexpected observations
- Check data quality and begin data analysis

S—Study the results of implementing the plan:
- Complete data analysis
- Consider qualitative data and other information
- Compare data to predictions
- Summarize lessons learned

A—Act on the findings. Decide:
- Did the change lead to an improvement?
- Was the improvement significant?
- Did the change produce any unintended effects? Did any other factors affect the outcomes?
- What changes will we test in the next PDSA cycle?

Table 1 below provides more detail on actions in the "A" step of a PDSA cycle.

Table 1. Actions and Next Steps in "A" of the PDSA Cycle

Action	Description	Next Plan
Continue Testing	Further testing on proposed change ideas	Continue the cycle on the same change idea starting from the P-part of the PDSA cycle
Adopt	Team ready to engage management to make the new change permanent in the system	Select other problems to solve and plan the adopted experience to share with others to improve their RI system
Adapt	Modify proposed change idea	Modify the change idea process to test it again or add additional change ideas to support the original change idea
Abandon	Drop and develop alternative change ideas to test	Start from proposed solutions/change ideas to address the problem

QI Tools and Techniques

Process Mapping

A process map (as shown in Table 2 below) is a critical examination of how a task is accomplished. It involves comparing the *ideal* with the *actual* process, enabling the users to identify and address the gaps. By identifying inefficiencies, it serves to align the actual to the ideal. Process maps help to identify problems and generate solutions by answering questions such as:

- Is the process standardized, or are the people doing the work in different ways?
- Are steps repeated or out of sequence?
- Are there steps that are unnecessary?
- Are there steps where errors occur frequently?

Table 2. Example of Process Mapping — Packing Vaccines in the Vaccine Carrier

S/N	Activity Description		Identified Gaps
	Standard/Ideal	**Actual Practice**	
Preparations			
1	Pre-cooling of diluents (storing diluents with vaccines in the fridge)	No pre-cooling of diluents	Gap
2	Cleaning and drying the vaccine carrier and sponge	Cleaning and drying the vaccine carrier and sponge	
3	Conditioning ice packs	No conditioning/use solid frozen ice packs	Gap
Packing in the carrier			
4	Placing ice packs into their chambers in the vaccine carrier	Placing ice packs into their chambers in the vaccine carrier	
5	Packing vaccines in polythene bags	Vaccines not packed in polythene bags (vaccine vials dropped directly into vaccine carrier)	Gap
5	Place vaccines in the vaccine carrier according to their heat/cold sensitivity	Place vaccines in the vaccine carrier according to their heat/cold sensitivity	
6	Insert a thermometer into the vaccine carrier	No thermometer	Gap
6	Place the dry sponge over the packed vaccine	Place the dry sponge over the packed vaccine	
7	Close the vaccine carrier tightly	Close the vaccine carrier tightly	

Root Cause Analysis

The concept of analyzing underlying causes within a whole system is also central to QI. Problem analysis is also an important part of REC micro-planning.

Root cause analysis is an efficient and effective way of understanding a problem. For example, in REC-QI, the RI dropout rate (DOR) is seen as a symptom, needing deeper local context analysis of root contributors to this quality concern.

The Fishbone or Cause and Effect Diagram (shown below) helps a team generate possible causes of a problem, classify them, and drill down to the underlying causes of the problems. This fishbone diagram analyzes the causes of the problem "increased DOR" with five main areas/levels of health system where the causes and root causes in each main area could be. It helps answer the question, "Are the dropouts mainly because of challenges at the national, district, HSD, HF and/or community level?"

Root cause analysis should focus on the root causes at the **local level** that can be addressed within the means of that level. Issues that need to be addressed at a higher level should be reported to that level.

Criteria for prioritizing the root cause to address first include:

- Ability to solve the problem through available resources (with minimal or no external support)
- Urgency of the root cause: the planning team considers it the most pressing
- Capacity of the intervention to have the most impact on the aim

Figure 3: Example of Root Cause Analysis Using the Fishbone Tool

Fishbone – Increased DOR
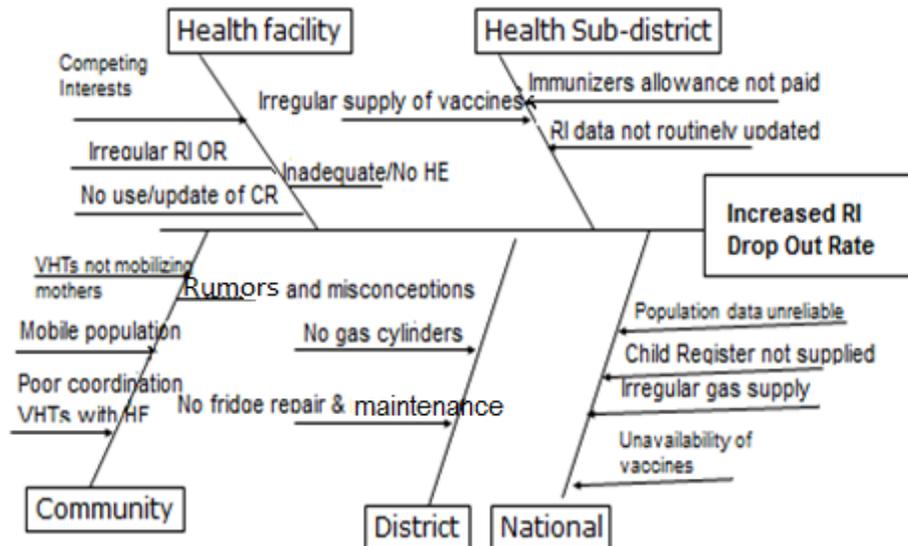
Abbreviations:

CR = child register	HF = health facility	VHTs = village health teams
OR =	RI = routine immunization	
HE =	RI OR =	

Peer Learning

Gaining knowledge and skills through active help and support among people who have similar responsibilities and objectives is called peer learning. It involves helping each other to learn and, in doing so, learning themselves. In REC-QI, peer learning takes place through integrated quarterly review meetings (QRMs), QWIT meetings, exchange visits, and other activities.

Coaching

The technique of building capacity for improvement is called coaching. Coaching calls for **mentoring**, open exchange of information, a collaborative approach between the coach and health workers (HWs) and/or QWIT members, in order to improve performance and meet objectives. Coaching is a way to provide on-the-job training. In REC-QI, supervisors trained in coaching serve as coaches and mentors.

REC plus QI

REC-QI is the whole REC strategy plus enabling QI tools, methodologies, concepts, and innovations/local solutions to make REC implementation feasible. REC-QI seeks to enable managers, HWs, and communities to better plan, implement, and assess REC.

The addition of QI to REC addresses a missing (and important) element in the REC strategy—***how*** to prioritize the many problems in RI to address. Existing REC tools do not offer guidance on how to make these decisions. Tools such as fishbone and process mapping, which are essential components of REC-QI, can help a team do this very critical thing.

REC-QI Guiding Principles

REC-QI is grounded in principles for sound, equitable, and high-quality health programming that many international agencies and global health institutions endorse. REC-QI principles are:

- Each level of health system *focusing on problems within its means* and reporting problems outside its means to the appropriate level.

- A *"bottom up"* approach focusing on the perspectives of communities, village health teams (VHTs), health facilities, and districts to inform the higher levels.

- Interventions and processes which are *feasible and affordable in the specific context* to facilitate spread.

- *Use of appropriate technology,* needing neither costly equipment and maintenance nor capacity beyond that of the typical HF personnel.

- *REC tasks are assigned to health system levels based on capacity.* REC tasks require different levels of equipment, staff time, skills and knowledge. These capacity items are not the same at all levels. Therefore, specific REC tasks should be assigned to a health system level with appropriate capacity.

- *System strengthening* for sustained and effective immunization coverage, rather than a rapid unsustainable rise in reported results.

- *Continuous learning and improvement.* Lessons learned are used to continuously improve the approach and processes

- *Broader stakeholder participation in EPI,* including involvement of non-traditional stakeholders outside the health sector.

- *Equal emphasis on the three essentials in RI* (HWs, vaccines, and children and their families) for vaccination to take place.

REC-QI Essential Processes

Rather than setting up new structures or bringing in new cadres of staff, REC-QI focuses on processes that strengthen or maintain the REC practices which are already in place and helps to ensure that practices which are not yet in place are carried out. The stool (see Figure 4) provides a conceptual representation of the essential REC-QI processes, combining the REC components with QI. Table 3 summarizes the REC-QI processes that correspond to the REC components.

Figure 4. Conceptual Representation of REC-QI Processes
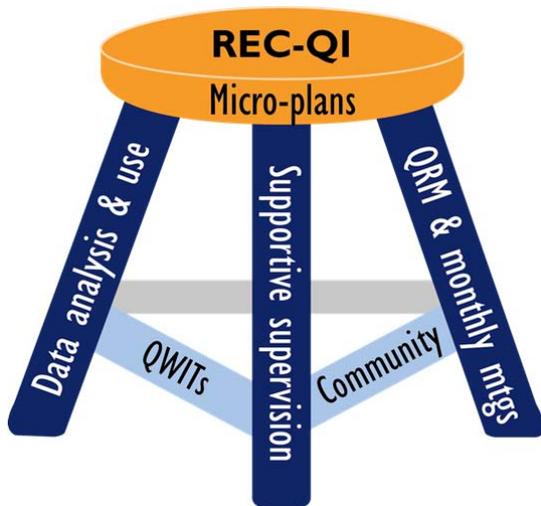
Table 3. REC Components and Corresponding REC-QI Processes

REC Component	REC-QI Processes that Strengthen REC and the RI System
Effective planning and management of resources: ensuring better management of human, financial, and material resources at every governing level	• Mapping of HF and RI service point catchment areas for target populations and more accurate vaccine forecasting • Use of enhanced RED Categorization Tool to identify the broad RI system problems, including those for individual HFs • Root causes of problems identified to develop and test locally feasible solutions • PDSA findings and supportive supervision reports inform development and implementation of annual REC micro-planning process • Quarterly review and updating of REC micro-plans based on local data analysis and information • Using on-the-job training (OJT) in supportive supervision to follow up recommendations and support those in need • Facilitating pre-service training institutions to conduct quality immunization training
Reaching all target populations: reaching out to previously underserved, un-reached communities, in giving support and access to services	• Identifying the underserved • Mapping to plan outreach for underserved and unreached populations • Use of VHT Child Register to identify newborns, unimmunized children, and under-immunized children and tracing them for vaccination
Linking services with communities: partnering with communities to promote and deliver services through regular meetings between communities and health staff	• Community members involved in planning, implementation, monitoring, and as full participants in QWITs • Participation of non-traditional stakeholders (e.g., district and sub-county leaders) in district and HSD integrated QRMs • Routine feedback from DHTs or HFs to local leaders (CAO, SAS, and chairpersons) and community/VHTs
Monitoring for action: using tools and providing feedback for continuous self-assessment at all levels	• Ongoing analysis and use of local EPI data to inform decision-making and use of available resources at all levels • Routine data quality self-assessment and improvement (Routine DQSI) • Learning shared at QRMs and other regular meetings
Supportive supervision: providing local staff with on-site training, feedback, and follow-up by supervisors	• Coaching, mentoring, and OJT to HWs • Focused supportive supervision checklists emphasizing problem-solving • SS findings documented and shared at QRMs and recommendations followed up. • Building supportive supervision capacity for HSD teams and HFs

Potential Benefits and Observed Achievements of REC-QI in Uganda

Generally, REC-QI, based on the RED strategy, is envisioned to generate intermediate and long-term achievements as described in the pathway in Figure 5 on the following page.

Figure 5. REC-QI Pathway towards Sustained High Immunization Coverage

REC-QI priority actions

Build critical mass of health workers able to initiate & operationalize REC-QI concepts, such as:
- Macro/micro mapping of communities to all HFs
- Monthly/quarterly use of RED categorization tool for all HFs
- Regular supportive supervision which includes coaching QI teams & peer sharing
- Monthly/quarterly review meetings, including peer learning
- QI teams of health workers & community members routinely implementing small-scale action plans (Plan-Do-Study-Act cycles)

Intermediate accomplishments
- Increased ability of districts & HFs to reach every community in a timely way with reliable quality static/outreach RI services & potent vaccines
- Better & more regular use of RI data for decision making in order to reach every eligible woman and child in every community
- National multi-agency mastery to operationalize REC-QI at scale through embedding concepts into key RI strategies/documents

Vision

More women and children continuously reached by effective, quality immunization services and protected from vaccine preventable diseases

The two "mini case studies" below demonstrate some of the many district performance changes documented during the time of REC-QI implementation.[8] (See Annex1 for complete REC-QI success stories.)

Involvement of Local Leadership Helps Improve Immunization Services

Monitoring for action—using tools and providing feedback for continuous self-assessment at all levels—is a key component of REC, and broad stakeholder participation in EPI, including involvement of non-traditional stakeholders outside the health sector, is a guiding principle of REC-QI.

Merging these two fundamentals through REC-QI in Kabale District allowed the District Health Team to realize that Nyamiryango Health Center II had **not vaccinated a single child for 6 months,** despite having a refrigerator, gas, vaccines, and other logistics.

At a district QRM, attended by political and religious leaders and HWs from all HCs in the district, the district chairperson learned of this failure. The chairperson met with the HC In-charge and the district health officer to understand why this had happened. After explaining the various challenges faced by the HF, they worked with others to apply REC-QI practices and principles that could address the challenges systematically.

The In-charge described what happened after that. "I am happy to note that after this meeting, the following achievements and successes have been registered at the health center. In September 2013, Nyamiryango HCII successfully immunized **79 babies** from birth to one year. In October, we have immunized **121 babies** from birth to one year from both static and outreach sites. In July and August, Nyamiryango carried out **one outreach session** each month, and in September and October, **two outreach sessions** were carried out each month." And, all of this was done using existing resources at the health center.

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[8]Attribution studies to this effect have not been conducted.

> **The Power of PDSAs and "Thinking outside the Box" in Solving Longstanding RI Problems**
>
> Data showed that Iganga District had poor access to RI (defined as <90% Penta 1 coverage). Root cause analysis found that the problem was irregular functioning of refrigerators resulting from a lack of standby gas cylinders (38 HFs lacked standby gas cylinders). This in turn was due to delays in procurement and delivery of standby gas cylinders because the district lacked authority to use available resources to obtain them. The QWIT, working with the DHO and the Chief Administrative/Officer, undertook a PDSA cycle focused on securing authority from the MOH to use its own funds to purchase cylinders. By engaging non-traditional stakeholders in improving RI, the district obtained eight standby gas cylinders using district funds, and an additional seven using contributions by the HF In-charges imprest funds. The gap for gas cylinders was reduced from 38 to five without external funding.

REC-QI Implementation Stages

Introducing REC-QI in districts is a systematic, but flexible process. The term "introducing" covers the overall process of managing, implementing, evaluating, and sustaining activities related to strengthening RI in a district and nationwide.

Introduction entails three stages (see Figure 6 below). The purpose of the stages is to ensure that district HWs and leaders understand, appreciate, and adapt the REC-QI concepts into their RI system. The period for REC-QI implementation to realize its full potential may be longer than the period for introduction. Therefore, coverage and utilization results at the end of the introduction period may not measure the full potential of REC-QI approach.

Figure 6. Stages in Introducing REC-QI

Basic stages when introducing REC-QI in a **new** district (Uganda version)
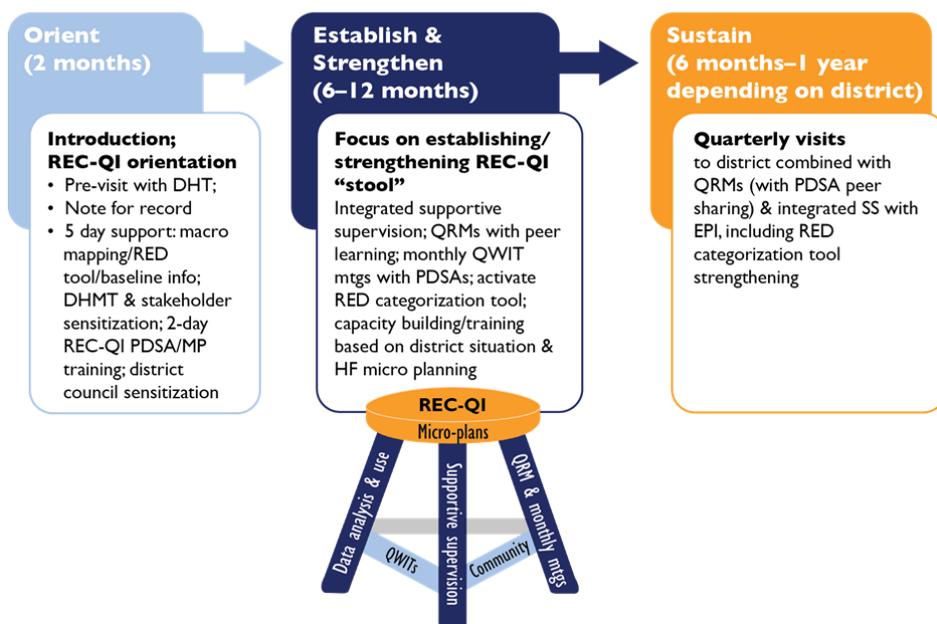
- **Stage 1. Orient** encompasses activities to initiate the implementation of REC-QI in a district. The overall focus is orientation to REC-QI and its associated principles and practices, and the initiation of planning for implementation. This stage typically takes 1 to 2 months.
- **Stage 2. Establish and strengthen** focuses on putting REC-QI into operation in a district. This stage could last 6 to 12 months depending on the strengths and weaknesses in the district RI and health system.
- **Stage 3. Sustain** outlines the activities that should be part of routine practice and incorporated into district budgets for sustainability. It also involves gradual withdrawal of intense support

Stage 1: Orient

Stage 1 encompasses activities to initiate the implementation of REC-QI in a district. The overall focus is orientation to REC-QI and its associated principles and practices, and the initiation of planning for implementation. This stage typically takes 1 to 2 months. Table 4 below shows the activities in this stage.

Table 4. Stage 1 Activities with Estimated Duration

Activity	Duration
1. Orientation for DHT and Briefing District Leaders	1 day
2. Planning for REC-QI Implementation	5 days (total)*
• Macro-mapping and Populating the RED Categorization Tool (Determining RED Category)	1 day
• First Integrated QRM (REC-QI Sensitization for District Health Staff and Other Stakeholders and Harmonization of the Macro Map)	1 day
• Training on PDSA and REC Micro-planning (for HWs)	2 days
• District Council Sensitization	1 day

*The 5-Day Planning for REC-QI Implementation activity coincides with a routinely planned QRM.

Orientation for the District Health Team (DHT) and Briefing District Leaders

Definition

- A meeting with the DHT to provide an overview of REC-QI and an understanding of the potential benefits. In addition, courtesy calls to district leaders focus on gaining and maintaining the support of important stakeholders for implementing REC-QI.

Purpose

- To orient the DHT and advocate for uptake of REC-QI implementation in the district

Main Activities

The DHO (or another "REC-QI champion/advocate") should:

- Review Sample Agenda for District Orientation and Leaders' Briefing.
- Share a broad picture of the REC– QI approach:
  - Background to REC-QI development
  - Implementation stages
  - Potential benefits
  - District contributions and gradual takeover
- Discuss how REC-QI contributes to RI system strengthening and measurement rather than focusing on coverage to measure RI system strength.
- If there is agreement to pursue REC-QI, establish dates for the 5-day planning activities, which will coincide with the next planned QRM.

- If REC-QI will be implemented, request data from the DHO and the district biostatistician, as outlined in Annex 2. Data to Collect and Assemble for the 5-Day Planning Activity, which should be ready before the planning activity.
- Pay courtesy calls to the key district leaders (CAO, District CP, RDC, District Secretary for Health and any others as advised by the DHO) to brief them on the approach and tentative decision by the DHT to implement.

Outputs

- Decision to pursue implementation of REC-QI or not
- If agreed to implement REC-QI, dates set for:
  - Assembly of baseline data
  - 5-day planning activities (to coincide with a scheduled QRM)

Planning for REC-QI Implementation

Day 1 of Planning for REC-QI Implementation (Macro-Mapping)

Definition

- Macro-mapping is the first activity in the REC-QI approach planning for RI in the district. It is a continuous process of identifying and assigning communities (parishes) to HFs for quality health service delivery. Clear knowledge of HF catchment areas and populations is essential for REC micro-planning. It takes 4 to 6 hours for the "working committee" for macro-mapping to come up with the first draft.

Macro-Mapping: A Summary

Work conducted in Nigeria under the BASICS project and also in Nakasongola district in Uganda developed macro-mapping as a procedure to overcome a challenge in REC implementation: identifying the catchment area of each HF in order to "reach every child." In addition, the government of Uganda recommends one HF per parish and makes available total population figures for each parish. However, many parishes have more than one HF, while some have none. This clearly justifies macro-mapping to facilitate reaching every community/child.

Macro-mapping entails three steps: 1) inputs/data, 2) drafting, and 3) harmonization.

Macro-mapping has these applications:
- Facilitates data-driven EPI micro-planning by providing a clear idea of HF target populations and catchment areas
- Makes vaccine forecasting more accurate
- Increases the likelihood that every child receives needed vaccines
- Helps to identify parishes that have been underserved or left out of RI so that actions can be taken to ensure services in the future
- Allows for RED categorization of HF

Purpose

- To assist the DHT in identifying and allocating communities (parishes) to HFs and to assess RI performance.

Main Activities

Preparation

- Form a working group (7–10 people)

- Before convening the working group on Day 1, enter the district population data from UBOS for the previous year for each administrative unit (County/HSD, sub-county, and parish) in a spread sheet.
- Merge the UBOS population data and the existing HFs in one macro-mapping Excel template (see Annex 3. Macro-Mapping Tools).
- Use color coding to indicate if the HF has an EPI refrigerator (red for yes); conducts immunization (black for no); and picks up vaccine from another HF (blue for yes). (See Annex 3. Macro-Mapping Tools for an example of a completed and coded draft macro-map.)

Meeting

> **Members of the Macro-Mapping Working Group**
> - District biostatistician
> - EPI FP
> - CCA/CCT
> - DHO/ADHO In-charge MCH
> - District planner
> - District secretary for health
> - District surveillance focal person (DSFP)
> - Any other person(s) knowledgeable about the geographical orientation of HFs, parishes, SCs and HSDs

- Provide the working group with an overview of macro-mapping and its purposes (background, steps, and applications).
- Use the merged UBOS data and HF list to guide discussion to allocate parishes to HFs (macro- mapping).
- Start with completing the list of parishes in the district to ensure that new communities and parishes are included (e.g., those resulting from district divisions), which UBOS may not have known or included in the list. Estimate the population of the new administrative units.
- Assign parishes to HFs using the following criteria:

  - Proximity of parish to the HF

  - Access to the HF by residents of the parish (geographical access; socio-economic access)

  - Capacity of HF to serve the parish (transport; number of health workers; availability of adequate vaccines and ice packs)

  - HF previously providing health services in the parish

- Use national population proportions (e.g., surviving infants 4.3%) to estimate the HF target populations for RI (children under 1 year) (see Annex 3. Macro-Mapping Tools).

Outputs

- Draft macro-map of HF catchment areas and target populations

The Afternoon of Day 1: Populating the Enhanced Reaching Every District (RED) Categorization Tool
Definition

- Using the target populations generated by the working committee in the morning to populate the enhanced RED Categorization Tool

Purposes

> **Participants in Completing the RED Categorization Tool**
> - District biostatistician
> - EPI FP
> - CCA/CCT

- To analyze district RI performance for a targeted period using the enhanced RED Categorization Tool.

Main Activities

- Enter the data from the draft macro-map and the doses of vaccines that the district biostatistician provided (immediate 6 months prior) into corresponding columns in the enhanced RED Categorization Tool

---

TIP: The RED Categorization Tool auto-calculates the coverage, unimmunized children, and RED category/broad problem (where Access =Penta 1 and Utilization =Penta 1-3 DOR)

- Using the district RI monthly performance data for the previous one year provided by the biostatistician, analyze and plot them on a chart to inform the baseline.

NOTE: Continue preparing for the 3-day training (Days 2–4).

Outputs

- Analyzed EPI data using the RED Categorization Tool: Broad overview of RI problems.

Day 2 of Planning for REC-QI Implementation (Sensitization on REC-QI and Determination of RED Category)

Participants in Sensitization on REC-QI
- All HSD and HF In-charges and their EPI FPs
- DHT, district contact person
- District secretary for health
- CAO, ACAO In-charge health
- DCDO, DEO
- Sub-county c/persons with their SAS
- Other health partners (CSOs and IPs) in the district.

Definition

- A one-day introduction to REC-QI and important elements of the REC-QI process for district health staff and non-traditional stakeholders.

TIP: This meeting is the first integrated quarterly RI review meeting in REC-QI implementation.

NOTE: The World Health Organization (WHO) has established categories of EPI performance, which managers use to identify problems in immunization programming and propose solutions to them. Table 5 below shows the categories and the level of the problem.

Table 5. RED Categories and Problem Identification Criteria

RED Category Types	Accessibility	Utilization	Level of the Problem
Category 1	Good	Good	No Problem
Category 2	Good	Poor	Poor Utilization
Category 3	Poor	Good	Poor Accessibility
Category 4	Poor	Poor	Poor Accessibility and Utilization

The categories are determined by calculating Penta 1 immunization coverage and DORs from Penta 1 to Penta 3 in a specific catchment area, using immunization data from the last 12 months. The cutoff points

are: Penta 1 coverage >90% is good accessibility, < 90% is poor accessibility; Penta 1 to Penta 3 DOR: 0-10% is good utilization and above 10% or below 0% is poor utilization.

The RED Categorization Tool is an Excel template that allows managers to analyze EPI performance by individual HFs, sub-counties, HSDs and the district as a whole. The RED Categorization Tool, which the MOH/UNEPI circulates to all districts, uses the population data from the macro-mapping and the data from the district biostatistician on number of doses of different vaccines administered. After these data are entered, the RED Categorization Tool automatically categorizes an HF, sub-county, HSD, and district as RED category 1 to 4 (see Annex 4. RED Categorization Tool Example and Guidance for more information).

Purposes

- To finalize the macro-map (harmonization)
- To create a more extensive understanding of the causes and possible solutions to problems in RI programming in the district
- To expand the base of support for improving RI to include stakeholders outside the health sector

Preparation

- Consult Sample Agenda for the 5-Day REC-QI Training and Planning

Main Activities

- Give an overview of REC-QI , emphasizing:

    - The objectives, rationale, concepts, process, estimated timelines, and achievements to date

    - REC-QI as an evidence-based, methodical process to strengthen RI

    - Rationale for building sustainable and equitable routine immunization *systems* (rather than focusing on increasing coverage)

    - The relationship between REC-QI and REC and its key components

    - Important processes in REC-QI: application of QI tools and methods to identify the causes of problems and test "doable" small-scale changes to solve them; sharing of promising practices with peers on a regular basis

    TIP: Remember that non-traditional stakeholders at this session may not be familiar with RI concepts and vocabulary. Ask for questions and feedback throughout the overview and other sessions to aid understanding.

- Review the draft macro-map to gain consensus with the HF In-charges and their leaders on HF catchment areas.

    - Present the draft macro map prepared by the working committee on Day 1.

    - Discuss the catchment area of each HF.

    - Determine if the HF In-charge and the leaders agree with the parishes assigned to their catchment area.

    - If needed, adjust the catchment areas/parishes assigned to the HFs.

    - If adjustments were made in the macro map, ask the biostatistician to recalculate the target population for each HF and share with participants in the same meeting.

- Encourage the HF In-charge to accept responsibility for health service delivery in the allocated parishes and target populations.

> **TIP: If a parish is served by two HFs, use previous HF data and knowledge to estimate the proportion of the parish population that can access each HF. Use the estimated proportions to estimate the population served by each HF. Regardless of allocation of parishes to an HF, people have the right to choose where to seek services. This allocation is for planning, monitoring, and evaluation purposes.**

> **TIP: The enhanced RED Categorization Tool, populated by the district biostatistician with support from national trainers, auto-incorporates the changes in categorization of the HF, sub-county, HSD, and district based on the harmonized catchment areas and target population.**

- Explain that the catchment areas and target populations are the basis of REC micro-planning and monitoring.
- Populate and complete the following REC micro-plan forms (see Annex 5. REC Micro-Planning Tools and Process for HFs):
  - Health demographic data
  - 1a: Situation analysis: Socio-demographic characteristics
  - 1c: Situation analysis problem identification and priority setting (RED categorization)
  - 2a: situation analysis by using the RED components: strengths, causes of problems, and solution analysis for immunization interventions
  - 3a: Immunization coverage targets
- Notify that each HF or office will receive a printed macro-map to facilitate documentation and planning:
  - Remind that macro-mapping is a continuous process, to be updated annually following the local government planning cycle with changes in population, parish boundaries, the addition of new HFs, etc.
- Present and discuss RI performance and baseline findings:
  - Present and explain the RED Categorization Tool as prepared on Day 1
  - Highlight the importance of examining RI performance at each level and in each HF because it is possible for a RED Category 1 district to have HSDs and/or HFs in lower categories (2, 3, or 4).
  - Present the baseline findings from the data collected earlier in the orient step
  - Brainstorm a list of causes of the observed performance.
  - Ensure that non-traditional stakeholders have a voice in identifying causes and proposing solutions.
  - Request leaders to comment on and make commitments to improving RI in the district.
  - Document the commitments for follow-up.
- Dedicate time to discussion of sustainability:
  - What does sustainable REC mean in the specific context?
  - What actions can stakeholders take now and in the future to promote sustainable RI systems?

- Remind participants that only DHT, HSD, and HF staff need to stay for Days 3 to 4.

> **TIP: Guide the discussion of RED Categorization so that the focus is on the performance and problems of the entire district, and not on individual people. Working together to improve RI to save lives of the district children is a responsibility of all.**

Outputs

- Final macro-map of HF catchment areas
- List of possible causes for the RI performance problems
- Completed REC micro-plan forms 1a, 1c, 2a, 3a, and health and demographic data

Days 3 to 4 of Planning for REC-QI Implementation (Training Teams in REC-QI, PDSA, and REC Micro-planning)

Definition

- The third day for planning for district REC-QI approach implementation. This is a "just-in-time" training for DHT, HSD and HF staff on REC-QI planning, implementation, and monitoring. "Just-in-time" means training that delivers required knowledge and skills for immediate practical application.

Purposes

- To build HW teams' capacities in using QI tools and techniques to improve and sustain RI performance
- To start the development of REC-QI PDSAs (DHT, HSD, and HF)

Main Activities

- Provide the REC-QI implementation context and the key activities.
- Using the RED categorization tables and baseline findings, identify and discuss the broad problems for each level.
- Prioritize the broad routine immunization problem categorization for each HSD by the baseline findings and the RED Categorization Tool.
- Working in groups and using the list of possible causes, analyze the root causes of the prioritized problems, using the Fishbone Tool.

NOTE: DHT and HSD analyze root causes of management issues related to the prioritized problem (with input from HF staff), and each HF identifies the root causes of the prioritized broad EPI problem of its respective HSD.

- Working in groups, develop an improvement aim statement and outcome measures for the first district and HSD PDSA cycle, using the Model for Improvement.
- Working in groups, propose change ideas (possible solutions to problems) and develop process measures, action points, and related data to collect.

NOTE: For aims, outcome measures, and change ideas, each HSD selects a management root cause and

HFs select 2–3 service delivery root causes to address in the first PDSA cycle.

- Compile the prioritized problems, aim statements, outcome measures, and other information for the district and each HSD in a draft RI Improvement Plan, to share with the District Council on Day 5 (see Annex 6. Sample Template for District RI Improvement Plan).
- Plan for QWIT formation and orientation at all levels and other subsequent activities (see Annex 7. Guidance on QWITs and PDSA Work).
- Discuss how to keep SC leaders engaged in improving RI.

Outputs

- Draft RI Improvement plan to share with District Council
- Draft PDSA plan (with aim, outcome measures, proposed changes, and data to monitor PDSA implementation) for each team represented (DHT and HSD management PDSAs; service delivery PDSAs for HFs)
- Plan for immediate steps on implementation of REC-QI, including:
  - Vaccine and other commodities/supplies forecasting using HF target populations from the macro-map by the HSD EPI FP
  - HF QWIT formation and strengthening
    - Briefing the QWITs on RI and plans
    - Further development of the PDSA: action points and assignments to the QWIT members
  - Date of follow-up supportive supervision visit
- Ideas for increasing the sustainability of REC

Day 4 of Planning for REC-QI Implementation (Monitoring REC-QI Implementation)

Definition:

- The DHT, HSD, and HF staffs receive training on REC-QI monitoring and tools.

Purposes:

- To build HW teams' capacities in monitoring the progress of REC-QI implementation

Main Activities:

- Introduce the tools used in REC-QI:
  - Child Register—Defaulter tracing (see an example in Annex 9. Micro-mapping)
  - Tally Sheet (see Annex 13)
  - Health Unit EPI Attendance Monthly Summary form (see Annex 14)

Stage 2: Establish and Strengthen

Stage 2 focuses on putting REC-QI into operation in a district. The MOH/RSST provides technical support to the DHT as needed, the DHT supports HSDs, and the HSDs support HFs. This stage builds the capacity of the district (DHT, HSD, HWs, VHTs, and leaders) to sustain REC-QI by encouraging managers and HWs to take a lead in planning, implementation, monitoring and evaluation of the RI program.

The duration of Stage 2 and its corresponding activities depend greatly on the district health system context, as determined by the findings of the situation analysis (e.g., the RED category and the root cause analysis of problems). For example, a district that lacks cold-chain equipment and trained technicians is likely to require more time and support to fully implement REC-QI than a district with a strong cold chain. Or, a district with a cadre of HWs well trained in EPI may not need to do OPL training. As a systematic, but flexible approach, REC-QI always takes into account both the strengths and weaknesses of the specific situation in a district. This stage could last 6–12 months.

Table 7 below shows the activities in Stage 2.

Table 7. Stage 2 Activities with Responsibilities and Estimated Duration

Activity	Responsible Person/Level	Duration, Frequency, or Timing
1. Implementation of Immediate Steps after the 5-day Activities (Stage 1)	All levels	
2. First Supportive Supervision (SS)	DHT	5 days (total)
• Training on organizing focused integrated SS and checklist development		1 day
• Preparation for SS : finalization of checklist and other logistics		1 day
• Field visits using updated checklists		2 days
• Reflection/review of field findings, report writing, and feedback to the DHO		1 day
3. Routine Integrated Supportive Supervision	DHT/HSD	Quarterly DHT to HSD Monthly HSD to HF
4. VHT Training of Trainers	HF	1 day
5. VHT Orientation and HF Micro-mapping	HF	1 day
6. Community and Leader Engagement	All levels	Ongoing
7. QWIT and PDSA Management and Implementation at All Levels	All levels	Monthly
8. Integrated QRMs and Sharing Outstanding PDSAs	DHT/HSD	Quarterly
9. Cold-Chain Maintenance	DHT/HSD	As needed
10. OPL Training	DHT	As needed
11. Exchange Visit(s)	DHT	After at least 2 QRMs
12. Sharing REC-QI Best Practices Outside the District (with UNEPI/Partners, Region, and RSST)	DHT	Ongoing
13. Coordination National, Regional, and Other District Leadership	DHT	Ongoing

NOTE: "All levels" means DHT, HSD, and HF.

Implementation of Immediate Steps after the 5-day Activities (Stage 1)

The immediate steps are:

- Setting the date for the first follow-up supportive supervision visit (See First Supportive Supervision below for more information on this 5-day activity)
- Forecasting for vaccines and other commodities and supplies
- Formation and strengthening of HF QWITs
- Completing HF-level REC micro-plan tools (see Annex 5. REC Micro-Planning Tools and Process for HFs):
  - 6b form: HF level monitoring tool
  - Monitoring chart
  - Chart for plotting the DOR

These activities set the stage for other activities in Stage 2 and are completed before the first SS visits by the different levels.

Vaccine and Other Commodities and Supplies Forecasting

Definition

- Successful implementation of REC depends on effective and efficient logistics management, including vaccine and other supplies forecasting, ordering, storage, and distribution. District macro-maps, which contain data on HF catchment areas and populations, allow accurate forecasting of vaccine and other supply needs. This activity is done preferably at the HSD level.

Purpose

- To produce accurate annual vaccine and other supplies forecasts, reducing the chances of stock-outs at HFs

Main Activities

- Shortly after the 5-day activities, the HSD EPI Focal Person completes (or updates) the annual forecast with monthly needs using the macro-map data.
- Make copies of the forecast to take to the HFs during the first supportive supervision to complete the HF REC micro-plan.
- Complete the following REC micro-plan forms:
  - 4a: Vaccine and other commodities supplies forecast
  - 4b: Injection and other supplies/materials forecast

NOTE: Routinely, each HF informs the HSD of its vaccine and other commodities stock at hand using the easiest means (e.g., SMS or telephone call) to help the HSD periodically quantify HF requirements.

Outputs

- Accurate annual and monthly vaccine forecast
- Completed REC micro-plan forms 4a and 4b for each HF (see Annex 5. REC Micro-Planning Tools and Process for HFs)

Health Facility Quality Work Improvement Team (HF QWIT) Formation and Strengthening

Definition

- Formation of the HF QWIT is the first step in REC-QI implementation at this level. The HF In-charge leads the process of HF QWIT formation.

Purpose

- To involve the community and parents in planning and management of RI services

Main Activities

- Convene an HW meeting:
    - Debrief on the 5-day activities.
    - Identify community representatives to participate in the QWIT.
    - Select community representatives who live in the HF catchment area and can access the HF at no cost to the HF.
- Hold a QWIT meeting:
    - Brief members on the HSD aim, root causes to be addressed by the HF, and their roles and responsibilities (see Annex 7. Guidance on QWITs and PDSA Work).
    - Discuss the root cause and complete the PDSA plan (aim, changes, process measures, action points).

NOTE: On a regular basis, the HF staff assess whether the change is taking place and the effect of the change on the initial problem. For example, if the initial problem was low DPT 1 coverage (<90% or poor access), the HF calculates its DPT 1 coverage and informs the QWIT whether the changes are improving on the problem or not to guide their action (Adapt, Adopt, Abandon).

Outputs

- List of QWIT members
- Outline of QWIT roles and responsibilities
- PDSA plan

First Supportive Supervision

Definition

- A 5-day just-in-time supportive supervision system strengthening training, with field practice, facilitated by MOH-QAD/RSST, UNEPI

Purposes

- To strengthen the supportive supervision system for RI
- To assist HFs in formation of QWITs and further development of PDSAs

Preparation

- Determine the number and skills of participants to invite:

    - The number of participants is based on the number of HFs to be supervised in the allocated time. For example, if 2 days are used to cover 20 HFs in the district, then a team of two supervisors will cover two HFs per day. Therefore, five teams are needed making a total of 10 supervisors (4 DHT, 2 HSD, and therefore four from Health Center IIIs).

    - Ensure that participants have the appropriate skills and knowledge to facilitate on-the-job training during supportive supervision.

Use Sample Agenda and Schedule for First Supportive Supervision.

First Day of Supportive Supervision Training

Important Features of a Focused Supportive Supervision Checklist
- Addresses identified problems in RI.
- Includes only a few themes to allow supervisors more time for on-the-job training.
- Can be changed to address new problems as they are identified.
- Links to the presentation of findings in the supportive supervision report.

Main Activities

- Introduce REC and link SS to the RED components (pages 5–8 of the RED/REC Health Facility Guide).
- Introduce continuous quality improvement (CQI).
- Introduce SS concepts and practices.
- Discuss process mapping to identify gaps in the SS system.
- Present Routine DQSI and improvement and how to integrate it into SS. [See Annex 8. Routine Data Quality Self-Assessment and Improvement (Routine DQSI)]
- Introduce key steps in planning SS:

    - Identify the need for SS.

    - Guide participants through focused SS checklist development and identify key information to be analyzed and presented in the report (see Annex 10).

    - Identify supervisors, teaming, and scheduling of SS visits.

    - Develop a budget with supervisors.

    - Communicate to the supervisees.

NOTE: To facilitate peer learning, assign supervisors to supervise HFs other than their own.

Outputs

- Developed focused integrated SS checklist
- Supervision teams
- SS budget
- Schedule of SS visits

Second Day of Supportive Supervision Training
Activities

- Present and discuss conducting SS:

    - Providing on-the-job training (coaching and mentoring supervisees)

    - Role-playing styles of SS

- Discuss and present providing feedback:

    - Immediate discussion with HWs

    - Documentation of strengths, areas of improvement, recommendations and support provided in the HF SS book

    - Debriefing to the DHO on key findings

    - Report writing; outline how to write a report (see Annex 11)

- Remind of the importance of follow-up on recommendations made during SS.
- Prepare for SS field visits:

    - Confirm that supervisors, transport, funds and all other logistics needed are in place. Take corrective measures if changes have occurred.

    - Distribute materials to teams.

Outputs

- SS materials checked and distributed to teams
- Increased knowledge of focused supportive supervision, including on-the-job training and report writing.

Third and Fourth Days of Supportive Supervision Training (Field Practice)
Main Activities

- Ensure teams leave early for the field SS visits.
- Conduct supportive supervision according to schedule:

    - Support HFs in formation of QWITs and further development and documentation of PDSAs.

    - Ensure on-the-job training and problem solving: support staff to solve the gaps identified before the SS teams leaves the HF.

    - Refer gaps that cannot be solved immediately or cannot be solved by that HF to the appropriate level/office for action.

    - Update supervisee on policy guideline and upcoming events.

- Submit completed checklists to lead supervisors.
- Inform HF In-charges to work with LC1 chairpersons in the catchment areas to identify VHTs for subsequent VHT orientation and community engagement in REC-QI.

Outputs

- HF QWITs sensitized and supported to complete their PDSA plan
- Increased capacity to conduct focused supportive supervision
- Completed checklists

> **Notes on Coaching a QWIT**
> - Assist with formation of QWIT, if not complete. (See also Annex 7. Guidance on QWITs and PDSA Work.)
> - Support community involvement in QWIT (VHT and HUMC); encourage VHTs to share their views/input
> - Support the QWIT to further analyze the root causes, development of change ideas, indicators, action points and data to be collected.
> - Review the QWIT minute book, or support them in documenting the PDSA: aim, changes, process measures, action points and data to be collected.

Fifth Day of Supportive Supervision Training (Reflection and Report Writing)
Main Activities

- In plenary, ask participants to comment on their experiences in the field practice.
- Review guidance on writing a supportive supervision report.
- Work in teams to analyze data and complete reports.
- Provide feedback to DHO on findings:

  - For this visit, include the status of formation of QWITs and development of PDSA plans in HFs.

Outputs

- SS report
- Increased capacity in focused supportive supervision
- Understanding of issues pertaining to RI performance at HFs

Routine Integrated Supportive Supervision
Definition

- Trained supervisors, using a focused SS checklist, assess performance of RI, provide support to HF QWIT and PDSA implementation, give feedback, and provide coaching and on-the-job training to supervisees routinely. This activity takes similar steps for SS as described in the training (First Supportive Supervision) above. Different levels of the health system conduct SS on different schedules as recommended by the MOH:

  - RSST to districts and selected HSD—Quarterly

  - DHT to HSDs and selected HF—Quarterly

- HSD to HFs—Monthly

- Internal HF SS—as scheduled

NOTE: The RSST supervises the DHT and selected HSDs/HFs or may join the DHT during the DHT SS.

Purposes

- To support HF staff in providing RI services according to set MOH/UNEPI policies, guidelines, and standards

Main Activities

NOTE: Complete planning for SS at least 2 weeks before the actual date for conducting SS.

- Follow the process outlined in
- First Supportive Supervision above:

  - Planning SS

  - Preparing the day before

  - Conducting SS

  - Providing feedback

  - Following up on recommendations made during SS

- During on-site support visits, supervisors and supervisees jointly:

  - Review the findings from the previous supervisory visit and actions to resolve issues.

  - Discuss achievements and challenges realized in fulfilling recommendations since the last SS.

  - Administer the focused SS checklists to identify strengths and areas of improvement. Discuss, prioritize, and assess root causes of the identified problems.

  - Provide on-the-job training and coaching; e.g., if an HF has a problem with a monitoring chart, support the staff to draw up the chart.

Outputs

NOTE: The outputs depend on the themes or objectives of the particular integrated SS visit.

- Some problems solved, e.g., drawing up RI monitoring charts
- SS report
- Improved staff competencies in RI and approaches to improving RI

Training of Trainers for Village Health Teams (VHTs)
Definition

- A 1-day workshop to build capacity of trainers who orient VHTs on RI and facilitate HF micro-mapping. The trainers are DHT members and HF In-charges.

Purposes

- To equip trainees with knowledge and skills in facilitating VHT orientation on RI and micro-mapping

NOTE: The VHT orientation and HF micro-mapping follow the TOT, with one day in-between for HF In-charges to finalize preparations. Invite VHTs to the orientation prior to the TOT.

Activities/sessions

- Use Sample Agenda for VHT Training of Trainers.
- Present and discuss the following:

  - Concepts and benefits of immunization

  - Updates on the current targeted immunizable diseases and their vaccines

  - RI schedule

  - Feedback on immunization performance, using data from the RED Categorization Tool

  - Formation and work of HF QWIT

  - Mapping villages to service delivery points (micro-mapping) (see Annex 9. Micro-mapping)

  - Mobilization for immunization: VHT Register, Child Health Card/Mother Passport, and key messages

  - Update on contraindications for immunization, side effects, AEFI, and community case detection

  - VHT roles and responsibilities

  - Completion of HF REC micro-plan forms 2a, 3a, 5a, and 5b (see Annex 5. REC Micro-Planning Tools and Process for HFs)

- Discuss SS of VHTs orientation and establish SS teams.
- Finalize agenda for VHT orientation.

> **Participants in VHT TOT**
> - All HF In-charges
> - HF EPI FPs

Outputs

- Trainers equipped with knowledge and skills to orient VHT on RI and facilitate micro-mapping and the need to report vaccine-preventable diseases (VPDs) to the HF
- Schedule for VHT orientation
- Teams set to support supervise VHT orientation at HF

VHT Orientation and HF Micro-mapping

Definition

- A 1-day activity, conducted at the HF, to orient VHTs to RI and RI planning and service delivery in their areas

> **Participants in VHT Orientation and HF Micro-mapping**
> - 2 VHTs per village of an HF catchment area

Purposes

- To equip VHTs with knowledge and skills to support RI services in their catchment area/villages, including defaulter tracing

- To assign villages (communities) to service delivery points (outreach and static) to ensure reaching every child (see Annex 9. Micro-mapping)
- To identify under and/or unserved communities/villages
- To develop, with inputs from VHTs, a "predictable" RI service delivery schedule
- To contribute to the HF REC micro-plan

Micro-mapping: A Summary

Micro-mapping is a continuous process of identifying and assigning of communities (villages) within an HF catchment area to RI service delivery points (static and outreach) Staff of an HF work with its catchment area community leaders (e.g., HUMC, VHTs, other groups, including non-traditional leaders) to identify all villages and allocate them to RI service delivery points.

Micro-mapping has three basic steps:
- Collecting inputs to micro-mapping
- Forming a working committee to produce a draft micro-map
- Harmonization/finalization

A critical output of micro-mapping harmonization is a new RI schedule which maximizes access to services by all allocated villages. Figure 7 below is an example of a new RI schedule.

Figure 7. Example of New RI Schedule

RUKUNGIRI DISTRICT - BUYANJA SUB-COUNTY Rubanga HC II Micro Map
Plan/schedule for immunization agreed upon with VHTs

S/N	Previous place, Day & time (OLD PLAN)	New place (NEW PLAN/SCHEDULE)	Day & week of month	Time of the day	Comments/VHT contact
1	Rubanga Static	Rubanga static	Every day	Whole day	
2	Nil	Omukihoona TC OR	Tuesday 2nd week	2 - 5.00 pm	
3	Nil	Rubanga Catholic Church OR	Wednesday 3rd week	2 - 5.00 pm	
4					
5					

Main Activities

NOTE: Cross check the updated list of villages in the HF catchment area to ensure that each village has been allocated to an HF.

- Use Sample Agenda for VHT Orientation and Micro-mapping.
- Share and discuss the following topics:

  - Benefits of immunization and key messages

  - RI schedule (vaccines and diseases they prevent)

  - Update on contraindication for immunization, side effects, AEFI and community case detection

  - Feedback on HF immunization performance

  - The HF QWIT (membership and roles)

  - Mapping villages to RI service delivery points—Micro-mapping (see Annex 9. Micro-mapping).

  - Development of predictable RI service delivery schedule

  - Tools: Child Register, VHT Registers, Child Health Card/Mother Passport (use and interpretation)

  - VHT roles and responsibilities: mobilization for immunization

- Next steps

- Share, discuss, update, and complete HF REC Micro-plan forms 2a (situation analysis) and 3a (coverage targets), which were started during the 5-day activity.
- Identify influential people in the parishes and villages in order to complete HF REC Micro-plan tool 5a (social mapping of stakeholders and partner analysis).
  - Transfer information from the RI service delivery schedule to HF REC Micro-plan tool 5b (immunization session static and outreach plan for the HF).

A Reorganized Child Register for Each RI Service Delivery Point

The MOH recommends the child register (CR) as primary data collection tool and the means to track defaulters and unreached, as recommended by the global *Immunization in Practice* modules relating to data tools.* In the REC-QI approach, the CR is reorganized to be more user-friendly. Each RI static and outreach service point has its own CR, with separate sections for each village served that registers all eligible children. The CR also includes a section for visitors (see Annex 9. Micro-mapping, for an example).

This arrangement of the CR facilitates easy retrieval of records for a continuing child, even if the child health card is lost: the mother only needs to state the child's village, and the HW opens that section to trace the child's records. In addition, when HWs communicate regularly with VHTs from a given village, defaulter children are easily identified from the different sections.

*WHO. *Immunization in Practice: A Practical Guide for Health Staff.* Geneva, 2004. www.who.int/immunization/documents/training/en/

Outputs

- Micro-map: villages/communities served at RI service delivery points clearly defined/listed
- Predictable RI service delivery schedule, with location, day, and time of RI service delivery plus contact VHT address and telephone
- VHT next steps
- VHT knowledge in using CR, child health card, and mother passport in mobilizing for RI
- Updated village list for the HF catchment area
- Completed HF REC Micro-plan forms 2a, 3a, 5a, and 5b
- With clearly defined villages for each service delivery point, a finalized HF catchment area sketch map with service areas for each outreach and static services, completed by the HF (see Figure 8 below for an example)

Figure 8. Example of Sketch Map of HF Catchment Area (Micro-plan Form 1b)
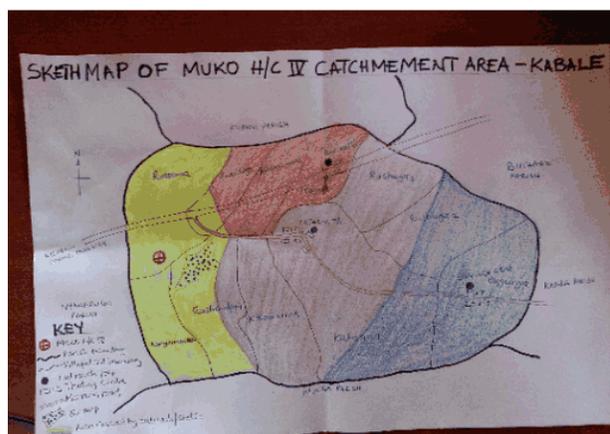
NOTE: By the end of the VHT Orientation, all HF REC micro-plan tools are complete except Tool 6a. Summary Activity Plan and Budget for Reaching Every Community, which will be completed during the next SS (see Annex 5. REC Micro-Planning Tools and Process for HFs).

Follow on activities

- Each HF completes Tool 6a.
- Aggregate them into an HSD or district REC micro-plan to facilitate those management levels to support implementation of REC micro-plans at the lower levels.
- Review and update REC micro-plans at integrated QRMs.

NOTE: Ensure that the micro-pans and micro-maps are finalized and shared at all levels.

Ongoing Community Engagement and VHT Liaison with HFs

Definition

- Ongoing community engagement and VHT liaison with HFs refers to establishing and maintaining partnerships among community members, HWs, and HFs. Partnerships are based on the principle that when communities are involved in planning, providing, and evaluating RI services, they will develop stronger trust in and ownership of those services.[9]

Purposes

- To involve caretakers and leaders in making decisions pertaining to RI service delivery
- To tailor services to community needs and local context

Activities

Use the following strategies to continuously engage the community:

- QWIT meetings
- VHT meetings with the HW at every outreach 30–60 minutes before the immunization session (update CRs, identify children for follow-up, and provide general updates)
- Annual VHT update meeting with all VHTs in the HF catchment area to review their HF performance, share success and bottlenecks, and plan for better RI service delivery.
- Involvement of non-traditional stakeholders (political, civil, and opinion leaders) at all levels through monthly feedback and participation in QRMs (solicit for their support in resource and community mobilization, emphasizing that it is their role to help provide the service to the community)
- Use the HC III monthly summary report (see Annex 12) to keep sub-county leaders informed and involved. Information may include:

  - Follow-up to Data Improvement Team (DIT) work in progress

  - Previous month analyzed data, e.g., DPT 1 coverage if broad problem was poor access

  - Report about planned vs. conducted RI outreaches

  - Priority challenges HF QWIT have planned to handle

  - Priority challenge requiring SC leaders' attention

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[9] WHO. *Immunization in Practice: A Practical Guide for Health Staff.* Geneva, 2004.

Outputs

- Updated HF CRs reflecting what is in the community, e.g., births/newborns, children vaccinated, RI defaulters and reasons, identification of unreached and hesitant communities
- Continued HW interaction with VHT
- RI services tailored to community needs for increased uptake
- Leaders regularly updated on RI service delivery

Implementation and Management of QWITs and PDSA Cycles

Definition

- QWIT teams for RI at district, HSD, and HF levels test a change idea by planning it, trying it, observing the results, and acting on what is learned. PDSA cycles can lead to new "best practices," to the identification of additional problems, and to discovering possible innovative solutions to be further tested.

NOTE: The MOH recommends that each HF have a QI Team (QIT) overseeing all service delivery in the HF with each health program, e.g., RI, also forming an HF QWIT. Each QWIT is represented at the QIT. QWITs have representatives from HWs, VHT, and community leaders. The QWIT does not have a permanent chairperson. At every meeting, the QWIT selects the chairperson of the day, with the HW as the secretary. The QWIT plans, continuously reviews, and re-plans for the success of PDSA.

NOTE: RI PDSA cycles focus on a single collective HSD improvement aim, established during the 5-day activity and REC micro-planning process (or the REC micro-plan review process). However, each QWIT works on finding a solution to a root cause of the "bigger problem," based on context-specific priorities. Thus, HFs *simultaneously* test different changes and share successes during quarterly review meetings for peer learning and adoption by other HFs.

Purposes

- To identify context-specific problems and generate and test solutions to the problems.
- To plan and review PDSA implementation and take appropriate actions (Adopt, Adapt, or Abandon)
- To continuously involve the community in RI service delivery decisions
- To break down overwhelming larger problems into smaller pieces that can be addressed by existing resources

Main Activities

- Set meeting dates for each HF QWIT, to coincide with regular HF, HSD, and DHT monthly staff meetings. Keep meetings as short as possible—at most 2 hours.
- Identify solutions/change ideas (that draw upon existing "assets and strengths") through brainstorming, dialogue, others' experiences, and/or process mapping the ideal process (re-designing).
- Select one change idea through consensus or majority vote method.
- Test the change idea using the PDSA model.
- Document the PDSA steps (see Annex 7. Guidance on QWITs and PDSA Work).
- The district/HSD supervisor provides coaching, mentoring, and other guidance to support QWITs at the HF level.

- Continue the QI process through additional PDSAs according to the decision to "adopt, adapt, or abandon" and the HF REC micro-plan.
- Share QWITs findings and experiences at HF staff meetings, higher levels in the system, and with local leaders, as well as at integrated QRMs.

NOTE: Bringing in community perspectives through VHTs, LC1, and other non-traditional stakeholders is critical to finding sustainable solutions to RI problems.

- Solicit VHT inputs and ideas during their meetings at an RI session and feed their ideas into the QWIT.
- Provide feedback to the VHTs at the next month's RI session.

Outputs

- Regular review of PDSA implementation
- Feasible local solutions to larger problems in RI, or
- A decision to seek and test alternative solutions

Integrated Quarterly Review Meetings (QRMs)

Participants in Integrated QRMs
HSD QRMs

- HFs In-charges in the HSD
- SC leaders (SAS and chairperson LC III or Secretary Health)

DHMT QRMs

- DHT members
- All HSD In-charges
- District-based non-traditional stakeholders (District Secretary Health, ACAO Health, District Chairperson, Health implementing partners and key opinion leaders)
- HF In-charges
- HSD heads
- DHT
- District chairperson
- Secretary for Health
- Sub-county leaders
- Other health partners in the district
- 6 HSD staff, SAS & C/Persons LC III, COs, HF EPI FP) about 55 ppts.

Definition

- In REC-QI, the integrated QRM brings together a range of stakeholders—from various levels of the health system and from outside the health system—in a management meeting to share experiences with REC-QI to enable learning about improving RI. The district (DHMT) and the HSD levels hold QRMs. QRMs are at the "Act" in the PDSA cycle where decisions can be made to Adopt, Adapt, or Abandon tested change ideas. The HSD QRM precedes the DHMT QRM.

Purposes

- To review progress on health work-plan implementation, including RI and replan
- To share tested local solutions (PDSAs) and facilitate peer learning
- To provide an opportunity to engage non-traditional stakeholders in issues pertaining to health and RI, and solicit their support

Main Activities

- Prior to the meeting, analyze health performance for RI using the RED Categorization Tool. (The QRM also addresses the various other program areas, e.g., ANC, deliveries in HFs, TB and IPT)

  - At HSD QRM, prepare a presentation on RI PDSA and other program areas for each HF, based on a predesigned format, which includes changes, action points, what has been done and progress towards the HSD aim, and other health programs.

  - For the DHMT QRM, prepare a summary report from each HSD QRM to present at DHMT QRMs.

- During the meetings:

> **Criteria for Selecting Outstanding PDSAs**
>
> - Aligned to the HSD aim
> - Clearly laid out PDSA plan (aim, change(s), process measures, action points, and appropriate data to be collected)
> - PDSA implemented fully, i.e., reached the Act step of PDSA
> - Result: either successfully improved the problem or unsuccessful, so that others do not attempt the same change

HSD QRM

- Present HF RI PDSA presentations (each HF).

- Present the overall health situation in the HSD including but not limited to RED categorization/RI performance (HSD management).

- Present key findings in the previous SS and update HWs on policy, guidelines, standards and upcoming events (HSD management).

- Discuss the presentation in plenary.

- Select outstanding PDSAs (both successful and unsuccessful PDSAs can inform the platform for learning) and set plans for next steps.

- Decide on support to be provided by the HSD management to HFs for better performance. Outstanding HFs may be asked to support HFs in need.

- Give leaders an opportunity to make comments and possible contributions to better health performance.

DHMT QRM

- Presents a summary of key issues (successes, challenges, performance and innovations) as by discussion in the HSD QRM (HSD In-charge)

  - Include outstanding PDSA cycles selected by the HSD QRM

- Presents the overall health situation in the district, including but not limited to RED categorization/RI performance (DHT)

- Present key findings in the previous SS and update participants on policy, guidelines, standards, and upcoming events.

- Discuss presentations in plenary.

- Select outstanding PDSAs (successful and those that were unsuccessful inform platform for learning) and set plans.

- Decide on support to be provided by the DHT to HSDs and selected HFs for better performance. Outstanding HSDs and HFs may be asked to support the ones in need.

- Give an opportunity to make comments and possible contributions to better health performance.

ALL QRMS

- Review and update health work plan, including REC micro-plans.

- Prepare minutes of the QRM with action points and follow up through supportive supervision.

- Start the next review meeting with a review of the status of the action points of the previous meeting.

NOTE: If the HSD aim has been achieved, the QRM prioritizes another big problem and sets a new aim.

The HSDs should document changes resulting from PDSAs that have contributed to achieving their aim. Lessons can be learned from both successful and unsuccessful PDSAs.

NOTE: Using information presented and discussed in QRMs/publications, the HSD, DHT, RSST, or MOH/UNEPI could prioritize low-performing districts, HSD, or HF for special support as described in the district context above.

Outputs

- Outstanding PDSAs selected for possible sharing at higher level or other districts
- Revised work plans/REC micro-plan
- Renewed commitment of participants to improving health performance
- Learning about new practices and possibilities
- Knowledge and documentation of potential best practices

Cold-Chain Maintenance
Definition

- A well maintained cold chain, or vaccine supply chain, ensures that vaccines are stored and transported within WHO-recommended temperature ranges from the time of manufacture until the point of administration.[10] The MOH/UNEPI conducts cold-chain maintenance. REC-QI strengthens the system by facilitating processes for the district cold-chain technician (DCCT) to seek support from UNEPI CCT on problems and possible spare equipment.

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[10] WHO. *Immunization in Practice: A Practical Guide for Health Staff*. Geneva, 2004

Purposes

- To support availability of potent RI vaccines
- To support functionality of the cold-chain system

Main Activities

- To address known cold-chain challenges in a district, DCCT/DCCAs should:
  - Inform UNEPI of the faults of EPI fridges and other cold-chain equipment in their districts to facilitate requests for spares from NMS.
  - Develop a maintenance plan and follow up the plan.
  - Undertake routine maintenance of cold-chain equipment.
  - Ensure there is a functional gas cylinder tracking system within the district (see
  - REC micro-planning tools (Annex 5. REC Micro-Planning Tools and Process for HFs)
- Practice processing data from Child Register to Tally Sheet and Monthly Summary.
- Introduce EPI monitoring charts (see Annex 16. EPI Monitoring Charts) and gas cylinder tracking form (see Annex 15)
- Practice processing data from monthly summary and drawing monitoring chart.
- Present and discuss routine Data Quality Self-Assessment and Improvement (see Annex 8. Routine Data Quality Self-Assessment and Improvement (Routine DQSI)).
  - Point out that Routine DQSI is an easy-to-use method of improving data quality that districts and HFs can carry out regularly.
- Describe the REC-QI micro-planning process (see Annex 5. REC Micro-Planning Tools and Process for HFs).
- Introduce micro-mapping (see Annex 9. Micro-mapping).

Outputs

- Familiarity with the use of special REC-QI as well as routine EPI tools
- Micro-mapping introduced

Day 5 of Planning for REC-QI Implementation (District Council Sensitization and Involvement in the Plan to Improve Routine Immunization (RI))

Definition

- One-day meeting to engage district leaders in understanding and supporting improvements in RI

Purposes

- Familiarize district councilors, HODs, and other stakeholders on REC-QI
- Obtain inputs, advice, and support from these stakeholders on RI Improvement Plan

Main Activities

- Prepare an agenda based on the sample agenda in the training guide.
- Give an overview of REC-QI approach.
- Show and discuss the macro-map of HF catchment areas.
- Present the baseline findings and the broad RI problems based on RED Categorization.
- Introduce and explain the draft district plan to improve RI.
  - Solicit inputs, advice, and support.
  - Advocate for endorsement and support of the district RI improvement plan.
- Encourage the leaders to think about how to sustain REC-QI and the improvements it produces.
- Describe the next steps of REC-QI introduction to the district.

Outputs

- Documentation of leaders' statements of commitment to and support for the RI Improvement Plan and REC-QI.
- Annex 15. Gas Cylinder Tracking Form).
- For faults that cannot be resolved by the DCCT/DCCA:
  - Technically support the DCCT to document faults in the cold-chain system that he/she cannot manage, either due to technical capacity or lack of spares. Provide orientation on the process and format of the report to MOH/UNEPI.
  - In a written request, seek assistance (technical and spares) from MOH/UNEPI.
  - After reviewing the district report and possible clarification with the DCCT on the report, MOH/UNEPI order spares from NMS.
  - Support the district to repair cold-chain equipment reported (MOH/UNEPI).
  - Send equipment that cannot be repaired in the HSD/district to the MOH/UNEPI for repair.

NOTE: To facilitate capacity-building, the UNEPI technicians should work with the DCCT on equipment repairs.

NOTE: Management-focused PDSAs can also resolve cold-chain challenges, such as the gas cylinder resupply and tracking system.

- Report on faulty cold-chain equipment submitted to MOH/UNEPI
- Cold-chain equipment repaired with support from MOH/UNEPI cold-chain technician

Operational Level Training on Immunization in Practice
Definition

- This training bridges the gap between pre-service training and in-service roles and responsibilities of HWs. This 5-day refresher training builds capacity of OPL HWs on the day-to-day EPI tasks at district, HSD, and HF level.

  OPL training is a RED-designed in-service capacity-building activity. REC-QI improves on the processes for effective capacity-building by adding key REC-QI concepts, e.g., tailoring content to

trainees' capacity, just-in-time, routine DQS and improvement, OJT in supportive supervision. It uses a variety of participatory methods and devotes ample time for practical sessions to enable trainees to improve skills.

Purpose

- To equip health workers with knowledge and skills to effectively manage and deliver RI services

NOTE: Group participants according to close cadres, e.g., enrolled nurses/midwives could be trained with nursing assistants.

Main Activities

- Use Sample Agenda for OPL EPI Training for Health Workers to plan the training and prepare an agenda.
- Include the following themes/sessions:
  - Overview of UNEPI and UNEPI Policy and Standards; include how EPI fits into the broader health system, and how they impact each other
  - Overview of district RI-related performance (RED categorization and how to use the generated information to develop an REC micro-plan
  - Introduction to immunity and its applications to RI
  - EPI target diseases
  - Uganda immunization schedule and Child Health Card/Mother Passport
  - Introduction and use of gas tracking mechanism
  - Cold-chain management (routine care of the EPI fridge, reporting faults to the appropriate level, packing vaccines)
  - Vaccine management and other EPI logistics (routine ordering, bundling, temperature monitoring, VIMCB, Tally Sheet, HMIS 105)
  - Planning for EPI services: Just-In-Time Training
    - Mapping HF catchment areas, enhanced RED Categorization Tool, REC micro-plans, vaccine forecast, predictable RI schedule)
    - Introduction to QI (QI principles, 5 whys), QI model, ladder of change, PDSA cycles
    - Problem-solving strategies (identification, root cause analysis using fishbone tool, prioritization, setting aims, ideas for improvement, changes/measures)
    - The change concept, barriers and enablers to change and leadership
  - Introducing new vaccines
  - Injection safety and health care waste management
  - Introduction to the REC strategy and importance of this strategy in Uganda
  - REC community engagement/involvement (working with the community and keeping leaders involved)

- Use of data for action (CR, EPI monitoring charts, routine DQSI and improvement), practical demonstration of immunization session)

- Introduction to EPI disease surveillance

- Field visits and field reports

  - Preparation for field visit and report writing

  - Conduct field visit

- Presentation of field reports and discussion

- Brainstorming session—What can be done to improve RI? (planning and reorganizing immunization for sustained and affordable improvements)

Outputs

- Updated knowledge and skills among trained HWs in conducting RI
- Improved capacity of HWs to identify problems associated with RI performance
- Improved knowledge and skills of trained HWs in use of key EPI tools (CR, EPI monitoring charts, VIMCB, gas cylinder tracking form, enhanced RED categorization).

Exchange Visit(s)

Definition

- This is a 3–5 day visit by one district with little experience in REC-QI to another district with more experience; or internally by one HSD to another HSD or HF to another to share experiences and local solutions with each other: peer learning. To be more effective, the districts (or HSDs/HFs) should have similar contexts (similar topography, culture) and face similar challenges to RI service delivery.

Purposes

- To enable districts/HSD/HFs to share REC-QI implementation experience (challenges and solutions)

Activities

- Discuss between hosting and visiting districts/HSD/HFs and agree on the detailed schedule.

> **Visiting Team Participants**
> 5–10 people, with participants depending upon the visit objectives.

  - Areas of focus could include:

    - Composition and function of QWIT (involvement of non-traditional stakeholders)

    - Process of problem identification and analysis, PDSA development, implementation and progress

    - Data management (collection, storage, and utilization)

- Include classroom and field visits in the schedule.

  - Possible field visits include: SS, QRMS, QWIT meeting, or HF visit.

- Ensure the visit is participatory; do not overload it with sessions/discussions.
- Set aside time for sharing and discussing what has been observed in the field visit.

- Keep the discussions objective. Ensure that they do not lead into comparing the two districts/HSD/HFs' performance, but rather provide an opportunity for learning.

Host district

- Prepare according to the agreed upon schedule.
- Identify facilitators to lead into key discussion areas as identified in the schedule.
- Identify HFs to visit.

Visiting district

- Ensure that the participants are well prepared for the visit.
- Set objectives to inform the learning.
- Identify facilitators to lead specific discussions.
- Review and share experiences.
- Develop a plan on how to apply what has been learned.

Outputs

- A plan to apply what has been learned by the visiting district/HSD/HF
- Solutions developed for some REC-QI challenges

Sharing REC-QI Best Practices outside the District [with Uganda National Expanded Program on Immunization (UNEPI)/Partners, Region, and RSST]

Definition

- The main purpose of REC-QI is to operationalize REC implementation in Uganda, and the approach is relatively new. This is an opportunity to share, discuss, improve, and facilitate scaling up in the country.

Purpose

- To scale out REC-QI best practices to other HFs or districts in Uganda for equity.

Activities

- QRMs
- Exchange visits
- Incorporation into national documents
- Presentations in different forums, e.g., conferences
- RSST
- Publications of articles and success stories
- REC–QI "How-to Guide" dissemination
- Involve EPI partners in REC-QI approach

Outputs

- REC-QI approach concepts presented, discussed, adapted, and adopted.

Coordination in the Implementation of REC-QI

Definition

- Coordination is the continuous process of ensuring that different REC-QI functions or activities of different groups or departments within the MOH are harmoniously accomplished in an efficient and organized manner so as to meet the objectives of REC-QI. Coordination is one of the key functions of managers at the different levels.

Purposes

- To promote partnership and team spirit through regular communication, meetings, and participation in the implementation of planned activities, sharing reports, and feedback
- To provide direction and guidance on how to best implement planned activities
- To optimize use of resources through integration of activities
- To motivate performance improvements in RI
- To improves awareness of REC-QI through regular interactions and peer learning with other districts, all levels of the health system, and local leaders

At the National Level

The MOH/UNEPI in conjunction with national EPI partners coordinates REC-QI implementation.

At the District Level

The DHO coordinates REC-QI activities.

At HSD and HF Levels

The In-charges at those levels coordinate activities.

Coordination between MCSP and districts or HSD and health facilities is for technical purposes, but not for decisions regarding staff transfer or recruitment, purchase of equipment, or sharing guidelines and policies not approved by MOH/UNEPI.

The success of the implementation of REQ-QI largely depends on the coordination process between the partners (e.g., MCSP/BMGF-funded SS4RI), MOH, other health development partners, and the district. Any gap in coordination may lead to the misunderstanding and low acceptance/performance of the REQ-QI approach as well as lost opportunities for using this approach to reach the last child with immunization services.

HFs are expected to contribute to the success of a PDSA, which was identified at HSD level. Regular coordination meetings and feedback at this level ensure that all HFs implement activities that are in line with the selected PDSA and will contribute to the achievement of the desired goal.

Coordination meetings at all levels and sharing of reports provide guidance on how best to implement the planned activities.

- Share information across departments and units on planned activities to increase efficiencies, e.g.:

  - Combine delivery of vaccines with cold-chain maintenance.

  - Collect monthly reports and/or empty gas cylinders during SS.

- The regular coordination between MOH/UNEPI and districts in the areas of data analysis and monthly feedback to the districts motivates districts and encourages them to identify performance gaps and plan for better performance.

Stage 3: Sustain

At this stage, the district should now have the tools and knowledge to continue activities on its own, with occasional technical assistance from the center (MOH or any other partner at national level) when requested and/or needed. In other words, the center gradually but surely reduces technical and financial support to the district for RI. Generally, the district takes a leading role in all activities; however, the MOH/UNEPI keeps close to ensure that the key activities of REC-QI introduced in Stages 1 and 2 continue in order to maintain the gains made and steadily continue to strengthen RI system for sustainable high RI coverage. "Sustain" here means that key REC-QI activities are institutionalized at all levels (are part of routine practice) and funding for them is incorporated into district and sub-county budgets.

Sustainability is built in from Stage 1 by **mainly** introducing QI and other methodologies that the district (DHTs, HSDs, HFs, communities, and all other stakeholders) can afford to sustain. The district, at the sustainability forum meeting, presents strategies for sustaining the activities of REC-QI.

In reality, during the sustain stage, the center funds a few activities, to supplement the district, e.g., if the center funds the HSD QRMs, the district should fund the DHMT that follows immediately. This stage puts more emphasis on helping the district to identify resources or sources of resources to sustain the critical ongoing REC-QI activities.

Continuous Supportive Supervision (SS), QRMs, and PDSA Cycle Implementation

A district needs to sustain the following critical ongoing REC-QI activities:

- Regular SS and coaching where the themes to support reflect the district's priority RI challenges and the checklist allows time for on-the-job training
- Holding regular QWIT meetings with minutes at all levels to review RI and PDSA implementation (action points)
- Conducting DHMT and HSD QRMs for collaborative learning where successful health facilities and PDSAs are identified, shared, and documented
- Regular use of EPI data for action at district, HSD, and at least 90% of the HFs, e.g., displaying and updating the EPI monitoring chart
- Ongoing involvement of community/VHT in QWITs and meetings at and before RI sessions
- Regular updates to CAO and SAS through monthly briefs or Technical Planning Committees (TPC) at the District and Sub-county levels

Indications that an RI System Has Been Strengthened

DHTs and HSDs should consider the indications below when determining if an RI system is stronger than it was before embarking on REC-QI:

- Better planning and management of resources, as evidenced by completed and regularly reviewed and updated REC micro-plans
- Better identification of target population (HF and RI service delivery points)—Reach
- Better scheduling and regular RI outreach sessions—**Availability**
- Fewer stock-outs of vaccines
- More frequent static RI services—**Availability**

- Better community understanding of need to complete the vaccination schedule—**Utilization** a**nd sustainability**
- District capacity to generate local solutions, within their mandate, to RI challenges—**Sustainability**.

Figure 9 outlines how REC-QI inputs contribute to a strong RI system.

Figure 9. Building Strong RI Systems
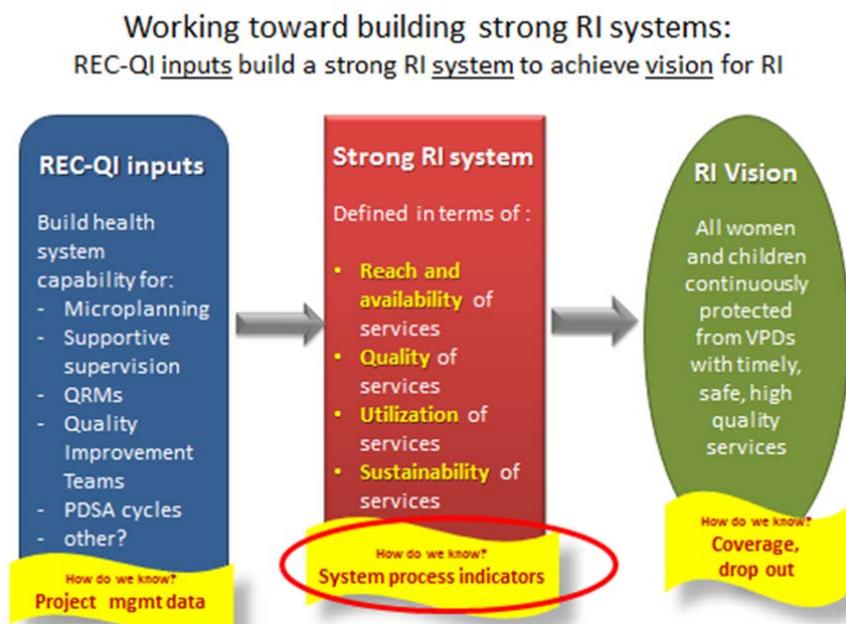
Experience on Scale and Sustainability from Other Programs

Five years' experience in moving from small-scale projects to scale-up and toward sustainability in supply chain management in Ethiopia, Malawi, and Rwanda provides some lessons that may be useful for REC-QI. [11]

- Consistent stakeholder consultation and intervention redesign and refinement, based on data and evidence from monitoring and evaluation activities, build the foundation for scale and sustainability.
- Gaining political commitment from senior MOH officials is critical to advancing scale and sustainability. Ongoing data sharing and collaborative problem-solving contribute to achieving the commitment.
- Attention to improving management components helps to establish an organizational culture of learning and QI, which can boost the likelihood of sustainability.
- A continuous improvement process, continued political commitment, and reliable financing are all necessary investments for the process to produce sustained benefits.

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[11]*From Pilot to Practice. Lessons on Scale, Institutionalization and Sustainability from the (In-Progress) Journey of the SC4CCM Project.* JSI, September 2014.

Monitoring and Evaluation of the REC-QI Approach

As a health systems strengthening model, the REC-QI approach should be monitored and assessed on its ability to improve functionality, efficiency, and sustainability of the routine immunization (RI) system. The performance monitoring system should be designed to assess how key components of the REC-QI model contribute to a strong routine immunization system, as illustrated in Figure 10.

Figure 10. Illustration of the Relationship between Key Components of the REC-QI Approach and a Stronger RI System
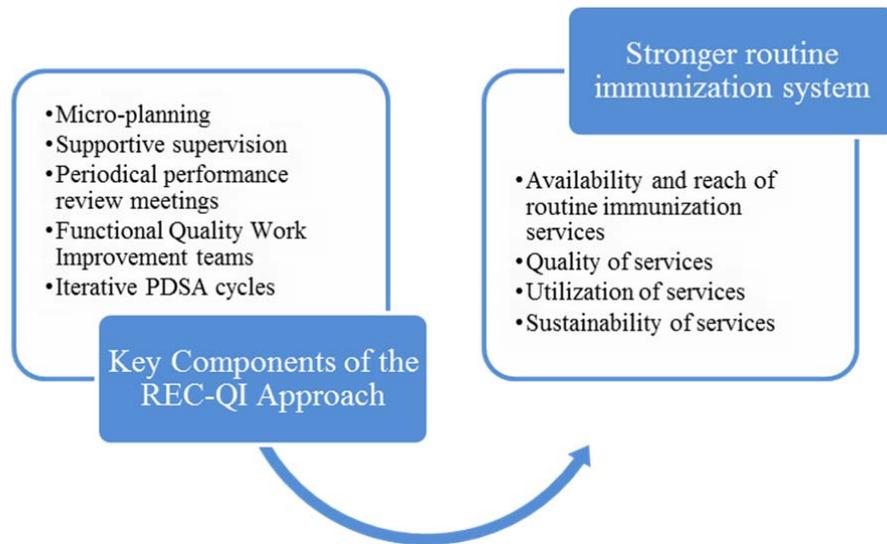
Immunization performance has traditionally been informed by outcome indicators of coverage and DORs, but these outcome measures are influenced by the intermediate outcomes that measure the strength of a routine immunization system.

Monitoring and evaluation under the REC-QI approach should go beyond measuring system outcomes and dig deeper to understand how the components of the approach are functioning and how they then affect the strength of the RI system. The following indicators are suggestions based on current thinking and should be adopted, adapted, or revised as the situation dictates.

Performance Indicators for Monitoring Key Components of REC-QI

1. Number of sensitization meetings on REC-QI held in each of the districts

2. Percentage of HFs in the district that have determined their catchment areas and populations for RI services

3. Percentage of HFs in the district that have annually updated their catchment areas and populations for RI services

4. Percentage of HFs in the district that have REC micro-plans for RI

5. Percentage of HFs in the district that are displaying up-to-date and accurate RI monitoring charts at their premises

6. Percentage of HFs in the district that have established QWITs

7. Percentage of scheduled HF QWIT meetings in each of the districts that were held in the last quarter

8. Percentage of performance review meetings held in the district that were attended by non-traditional stakeholders

9. Percentage of HFs in the district that have documented PDSA cycles showing improvements in a selected RI problem

10. Percentage of HFs in the district that have received at least one RI-focused supportive supervision session in the last quarter

11. Number of VHT members and community leaders who have attended REC-QI orientation sessions

12. Percentage of HFs in the districts that had VHTs participating in the micro-mapping activities for RI

Performance Indicators for Monitoring a Strengthened RI System

1. Percentage of villages in the district that were reached by RI services at least once in the last quarter

2. Percentage of health facilities in the district that provide static RI services at least once a week

3. Percentage of districts that have analyzed RI data for the previous quarter using the RED Categorization Tool

4. Number of EPI stakeholders who include key components of the REC-QI approach in their capacity building materials and/or activities

5. Percentage of HFs in the district that have had no stock-outs of Penta 1 vaccines in the last quarter

6. Percentage of HFs in the district where wait times for RI services are less than 30 minutes

7. Percentage of HFs in the district where RI outreach services are at least partially funded by the DHO's office

Costs for Implementing REC-QI

As the REC-QI approach aims to strengthen the full implementation of REC in Uganda, most REC-QI activities are already being implemented under REC. In addition to providing the "how-to" prioritize, REC-QI enables effective use of the available resources by addressing the most pressing or rewarding problems and their root causes first. REC-QI adds quality tools, methodologies, and innovations/local solutions to make their implementation feasible and structured to fit within the existing local government health service delivery system. To advance sustainability of stronger RI systems, planning and budgeting for REC-QI activities should fall within the district mandate and capacity. A few areas of added cost are highlighted below.

Expenditure Items

The expenditure items to be budgeted for during the implementation of REC-QI activities include, but are not limited to: Safari Day Allowance, fuel, lunch for participants attending a meeting for the whole day, hall hire in case participants cannot fit within the available district hall, and stationary/HMIS tools.

- The REC-QI approach may incur some extra costs while implementing some routine activities, e.g., the attendance of non-traditional stakeholders at QRMs and printing of tools.

- One-off activities involved in REC-QI, such as trainings and field activities/practicums, also require incurring additional expenses for venue hire, participants' per-diem, meals, transport refund, training materials, and facilitators' package, among others.

- Added activities like macro- and micro-mapping of HF and service delivery point catchment areas can largely fit in the existing REC activities, e.g., DHT planning meeting (macro- mapping), extended DHMT QRM (harmonization), VHT/HF meeting (micro-mapping).

- REC-QI encourages peer to peer cross learning through exchange visits. These are completely new to REC, but support development and sharing proven local solutions to similar challenges in an area.

The approved government rates apply to the different expenditure items in implementing REC-QI activities.

Conclusion

Uganda now has more than 5 years of experience with REC-QI (and its precursor project in Masaka district) in 9 districts so far. REC-QI focuses on strengthening the capacities of managers, HWs, and communities to apply QI concepts and practices, including the development of feasible local solutions to problems, within the context of national REC strategy implementation. This approach shows promise in resolving many of the shortcomings noted in the Comprehensive EPI Evaluation of 2015. Some of the challenges noted in the Evaluation, which REC-QI specifically addresses, include: the lack of reliable target population data for carrying out micro-planning and performance tracking at lower levels; inadequate monitoring at all levels; inadequate supportive supervision to lower levels; and limited use of data for informing programmatic action.[12] REC-QI also highlights the important role of VHTs as well as of non-traditional stakeholders in improving RI services.

In sum, adding QI to REC offers an iterative improvement approach for building an immunization system strong enough to sustain high-coverage RI. REC-QI also has the potential to be applied to improvements in other areas of health service delivery, such as maternal, newborn, and child health. Over the next 3 years, MCSP and the BMGF-funded SS4RI will continue to learn about the adaptability and sustainability of the REC-QI approach on a much larger scale and plan to update the guide with new lessons and guidance.

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[12]*Uganda Comprehensive EPI, Surveillance, Immunization Financing Review and Post Introduction Evaluation of Pneumococcal Vaccine 23 Feb-6 Mar 2015. Executive Summary, Recommendations and Road Map.* 2015.

Summary of Roles and Responsibilities in REC-QI

Table 8 summarizes the roles and responsibilities in REC-QI: the activities, who (the category of health staff) is responsible for the different activities, the estimated duration, and where to find more information about the activities in this guide.

Table 8. Summary of the REC-QI Roles and Responsibilities

Activity	Who is Responsible	Duration	Where to Find Details and Tools in the Guide
Stage 1: Orient			
1. Orientation for DHT and Briefing District Leaders	DHT/Partner	1 day	Overview of Reaching Every Child through Quality Improvement (REC-QI
2. Planning for REC-QI Implementation	DHT/Partner	5 days (total)	Orientation for the District Health Team (DHT) and Briefing District Leaders
• Macro-mapping and Populating the RED Categorization Tool (Determining RED Category)	DHT and Macro-Mapping Working Group	1 day	Day 1 of Planning for REC-QI Implementation (Macro-Mapping) Annex 2. Data to Collect and Assemble for the 5-Day Planning Activity Annex 3. Macro-Mapping Tools The Afternoon of Day 1: Populating the Enhanced Reaching Every District (RED) Categorization Tool
• First Integrated QRM (REC-QI Sensitization for District Health Staff and Other Stakeholders and Harmonization of the Macro Map)	All HSD and HF In-charges and their EPI FPs DHT, district contact person Non-traditional stakeholders	1 day	Day 2 of Planning for REC-QI Implementation (Sensitization on REC-QI and Determination of RED Category) Annex 4. RED Categorization Tool Example and Guidance Annex 5. REC Micro-Planning Tools and Process for HFsAnnex 3. Macro-Mapping Tools
• Training on PDSA and REC Micro-planning (for HWs)	DHT, HSD, and HF staff	2 days	Days 3 to 4 of Planning for REC-QI Implementation (Training Teams in REC-QI, PDSA, and REC Micro-planning) Day 4 of Planning for REC-QI Implementation (Monitoring REC-QI Implementation) Annex 5. REC Micro-Planning Tools and Process for HFs Annex 6. Sample Template for District RI Improvement Plan Annex 7. Guidance on QWITs and PDSA Work Annex 8. Routine Data Quality Self-Assessment and Improvement (Routine DQSI) Annex 9. Micro-mapping

Activity	Who is Responsible	Duration	Where to Find Details and Tools in the Guide
• District Council Sensitization	DHT District councilors SAS SC chairperson Heads of departments and other key stakeholders	1 day	Day 5 of Planning for REC-QI Implementation (District Council Sensitization and Involvement in the Plan to Improve Routine Immunization (RI))
Stage 2: Establish and Strengthen			
1. Implementation of Immediate Steps after the 5-day Activities (Stage 1)	All levels	Complete before First Supportive Supervision	Implementation of Immediate Steps after the 5-day Activities (Stage 1) Vaccine and Other Commodities and Supplies Forecasting Health Facility Quality Work Improvement Team (HF QWIT) Formation and Strengthening Annex 5. REC Micro-Planning Tools and Process for HFs Annex 7. Guidance on QWITs and PDSA Work
2. First Supportive Supervision	DHT	5 days (total)	First Supportive Supervision
• Training on organizing focused integrated SS and checklist development		1 day	First Day of Supportive Supervision Training
• Preparation for supportive supervision: finalization of checklist and other logistics		1 day	Second Day of Supportive Supervision Training Annex 8. Routine Data Quality Self-Assessment and Improvement (Routine DQSI) Annex 10. Sample Focused Supportive Supervision Checklist
• Field visits using updated checklists		2 days	Third and Fourth Days of Supportive Supervision Training (Field Practice) Annex 7. Guidance on QWITs and PDSA Work Annex 11. Sample Supportive Supervision Report
• Reflection/review of field findings, report writing, and feedback to the DHO		1 day	Fifth Day of Supportive Supervision Training (Reflection and Report Writing) Annex 11. Sample Supportive Supervision Report
3. Routine Integrated Supportive Supervision	DHT/HSD	Quarterly DHT to HSD Monthly HSD to HF	Routine Integrated Supportive Supervision

Activity	Who is Responsible	Duration	Where to Find Details and Tools in the Guide
4. VHT Training of Trainers	HF	1 day	Training of Trainers for Village Health Teams (VHTs Annex 5. REC Micro-Planning Tools and Process for HFs Annex 9. Micro-mapping
5. VHT Orientation and HF Micro-mapping	HF	1 day	VHT Orientation and HF Micro-mapping Annex 5. REC Micro-Planning Tools and Process for HFs Annex 9. Micro-mapping
6. Community and Leader Engagement	All levels	Ongoing	Ongoing Community Engagement and VHT Liaison with HF Annex 12. HC III Summary Report for Leaders
7. QWIT and PDSA Management and Implementation at All Levels	All levels	Monthly	Implementation and Management of QWITs and PDSA Cycles Annex 7. Guidance on QWITs and PDSA Work
8. Integrated QRMs and Sharing Outstanding PDSAs	DHT/HSD	Quarterly	Integrated Quarterly Review Meetings (QRMs)
9. Cold-Chain Maintenance	DHT/HSD	As needed	Cold-Chain Maintenance
10. OPL Training	DHT	As needed	Operational Level Training on Immunization in Practice
11. Exchange Visit(s)	DHT	After at least 2 QRMs	Exchange Visit(s)
12. Sharing REC-QI Practices	DHT	Ongoing	Sharing REC-QI Best Practices outside the District [with Uganda National Expanded Program on Immunization (UNEPI)/Partners, Region, and Regional Supportive Supervision Team (RSST)
13. Coordinating National, Regional, and Other District Leadership	DHT	Ongoing	Coordination in the Implementation of REC-QI
Stage 3: Sustain			
1. Continuous SS, QRMs, and PDSA Cycles	All levels	Ongoing	Stage 3: Sustain Continuous Supportive Supervision (SS), QRMs, and PDSA Cycle Implementation
2. Indications that an RI System Has Been Strengthened	All levels	Ongoing	Indications that an RI System Has Been Strengthened
3. Experience on Scale and Sustainability	All levels		Experience on Scale and Sustainability from Other Programs

Activity	Who is Responsible	Duration	Where to Find Details and Tools in the Guide
Monitoring and Evaluation of REC-QI			
Monitoring and Evaluation	District Biostatistician	Ongoing	Monitoring and Evaluation of the REC-QI Approach Performance Indicators for Monitoring Key Components of REC-QI Performance Indicators for Monitoring a Strengthened RI System
Costs for Implementing REC-QI			
Costs	DHT Local leaders (e.g., LC1) District council	Ongoing	Costs for Implementing REC-QI Expenditure Items

Glossary

Data Quality Self-Assessment and Improvement (DQSI Routine). A process to continuously measure and facilitate improvement of data **accuracy and consistency** at all levels. DQSI is used during internal (at the HF) and external supportive supervision.

Fishbone Diagram (Cause and Effect Diagram). A graphic tool used in QI that helps generate possible causes of a problem, classify them, and drill down to analyze the root causes of the problem.

Macro-mapping. A continuous process of identifying and assigning communities (parishes) to HFs for quality health service delivery to define HF catchment areas and populations for REC micro-planning.

Micro-mapping. A continuous process of identifying and assigning of communities (villages) within an HF catchment area to RI service delivery points (static and outreaches).

Minute Book. An ordinary counter book used to record minutes of the health facility Quality Work Improvement Team (QWIT) meetings.

Model for Improvement. A framework to guide QI. The model includes three fundamental questions (the aim, the outcome measures, and the possible solution to a problem—a change idea) and cyclical PDSAs.

Plan-Do-Study-Act (PDSA). A QI problem-solving model used for carrying out changes or making improvements. P= plan the change; D = do the change; S = study the change; A = act to maintain the change or to continue to improve.

Process Map. A QI tool to critically examine how a task is accomplished. It involves comparing the *ideal* with the *actual* process, enabling the users to identify and address the gaps. By identifying inefficiencies, it serves to align the actual to the ideal.

Quality Improvement (QI). A cyclical process of measuring a performance gap; understanding the causes of the gap; testing, planning, and implementing interventions to close the gap; studying the effects of the interventions; and planning additional corrective actions in response.

Quality Work Improvement Team (QWIT). The group of individuals that meets regularly to identify and analyze areas in need of improvement, propose solutions, and test change ideas. The QWIT oversees and performs carefully selected tasks to solve identified problems affecting the specific program.

RED Categorization Tool. An excel-based tool to collect and analyze core EPI performance indicators (Penta 1, Penta 3 and Measles) data. It allows assessment of performance by health facilities and the district as a whole.

Reaching Every Child through Quality Improvement (REC-QI). An approach to strengthening the routine immunization (RI) system through the application of practical quality improvement (QI) models and tools, with the aim of making the five components of REC fully operational in a district.

Village Health Team (VHT). A non-statutory community (village) structure selected by the people themselves to manage all matters related to health and cross-cutting issues. VHT members are chosen by their own communities to promote health and wellbeing of all village members.

Annex 1. REC-QI Success Stories

Involvement of Local Leadership Helps Improve Immunization Services: The Nyamiryango HC-II Experience in Kabale District, Uganda

"Last year I did not carry out routine immunization (RI) for 6 months" says Alex Kwikiriza, In-charge of Nyamiryango HC II located in Butanda Sub-county, Ndorwa West Health Sub-district (HSD) in Kabale district. "My health facility under-performance could not be noticed because the district health office could not assess performance of individual health facilities, but sub-counties, due to lack of clearly demarcated service areas for each health facility, and thus target populations."

Alex Kwikiriza is an enrolled comprehensive nurse and has been working at Nyamiryango HC II for 2 years. In the last 11 months, he has seen great improvement in RI at the health center—an activity that had previously been abandoned completely.

MCHIP/Uganda facilitated Kabale district local government to conduct macro-mapping of communities/populations against health facilities throughout the whole district. Mapping facilitated the District Health Team (DHT) to clearly identify the service areas of each health facility and target population. Using the target population and local EPI data, each health facility's performance for 6 months was assessed. Best- and worst-performing health centers on RI were identified using a national RI Categorization Tool being encouraged by the Uganda National Expanded Program on Immunization (UNEPI) and partners.

Alex noted, "Kabale DHT, with MCHIP/Uganda support, organized a district quarterly review meeting attended by political and religious leaders and health workers from all static health centers in Kabale district. It was found out that my health center had not vaccinated any child for the past 6 months."

> "The district Chairperson asked me to stand amidst the meeting to explain why my health facility had not vaccinated a single child in the past 6 months despite having all that it takes to vaccinate children. "It was a hard moment for me! They also showed me the effects of this poor performance. I was very touched and ashamed to be the In-charge of a health facility performing poorly and letting down the whole district."

Alex continued, "The district chairperson asked me to go to his office and discuss the challenges I face in the health facility and come up with solutions. As a result of this meeting, Nyamiryango HC II RI challenges were put in the spotlight of both political and health leaders of the district. I met with the district chairperson, and the district health officer explained to them the various challenges faced by the health facility. Then, these challenges were systematically addressed."

His face beaming with confidence, he says, "I am happy to note that after this meeting, the following achievements and successes have been registered at the health center. In September 2013, Nyamiryango HC II successfully immunized **79 babies** from birth to one year. In October, we have immunized **121 babies** from birth to one year from both static and outreach sites. In July and August, Nyamiryango carried out **one outreach session** each month, and in September and October, **two outreach sessions** were carried out each month." All of this was done using existing resources at the health center.

"I thank MCHIP/Uganda for coming in, for without their intervention, Nyamiryango to date would still not carry out vaccinations. We now know which villages to focus on and our target populations, we track and access utilization issues and follow up in strengthening immunization. MCHIP/Uganda has also helped us in identifying our immunization needs and challenges and we also understand that each health facility is accountable for providing health services to their identified community." Alex further asserts

that, "through the continuous mentorship and training I have received over the past year from the DHT and MCHIP, the immunization rates of Nyamiryango HC II have steadily gone up and there is a great improvement in the service delivery at the health center."

> **Alex's summary of what has changed in the past 11 months:**
> - To address the storage problem of vaccines, the district has provided solar energy for the HC II. The fridge is fully functional and vaccines are brought on time and stored safely.
> - The DHT has been routinely following our performance and frequently checking performance during supportive supervision.
> - A support staff member [Is this change OK? YES] from HC III has been brought to assist with both static and outreach immunization sessions; we usually pay her from our PHC funds. We also have a retired nurse who is a volunteer vaccinator who comes and assists with RI sessions on the days when we have static and outreach services. She is paid a small stipend for her services from our PHC fund. This has reduced my work load at the health center.
> - There has been sensitization of the community on RI services from both political and religious leaders and health workers, and the parents and caretakers of children are happy that we are immunizing again.
> - Village Health Team (VHT) coordinators have been oriented to RI and they assist with mobilization of communities to attend the outreach sessions. The VHTs are given an allowance for their services from our PHC funds.
> - In addition, a QWIT comprised of sub-county leaders, Community Development Officers, Health Assistants, In-charges of health facilities and focal points for immunization, and parish coordinators (a total of 20 people) held a sub-county review meeting supported by the DHT and MCHIP. We identified our problems, prioritized three major problems where we developed an aim, some ideas to make changes to, and indicators to measure how well our ideas are solving our local problems.

The Power of PDSA and "Thinking outside the Box" in Solving Long-Standing RI Problems: The Iganga District Experience

Statement of the problem

- Low access (Penta 1 coverage) to routine immunization (RI) services

Root cause to be changed/improved

- Irregular functioning of fridges due to lack of standby gas cylinder (inventory revealed 20 health facilities (HFs) lack standby gas cylinder). MOH took over 10 years to supply standby gas cylinders.

Prioritized root causes

- District lacked authority to use available resources to procure gas cylinders
- Lack of RI involvement of non-traditional stakeholders

Plan-Do-Study-Act Aim/Objective

To procure 20 standby gas cylinders by Dec 31, 2013

Outcome Measure

- Number of HFs with two gas cylinders (one on fridge, one standby)

Process Measures

- MOH/UNEPI guidelines to allow district to use available resources to procure gas cylinders secured

- Number of stakeholders contacted by the selected committee
- Number of gas cylinders procured and distributed to health facilities
- Results: The Quality Work Improvement Team, through the District Health Officer and Chief Administrative/Accounting Officer, secured authority from MOH to use district resources and procured:
    - 8 standby gas cylinders using district funds
    - 7 gas cylinders from contributions by the HF In-charges imprest funds
    - Pending gap: 5 standby gas cylinders

Trend of # of HFs with 2 Gas Cylinders
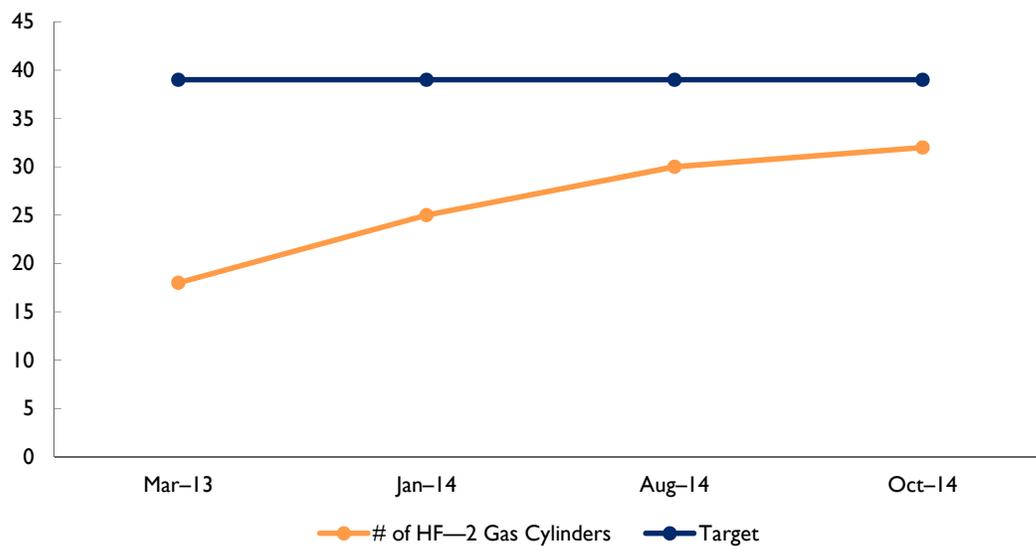
Iganga Annual RI Coverage Trends
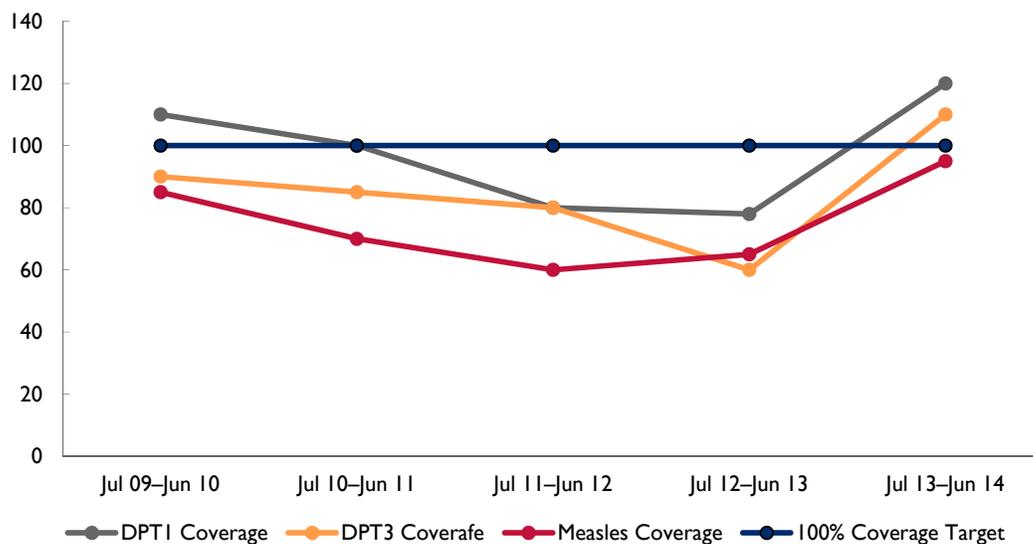
- Bridging gap of gas cylinders contributed to RI coverage improvement

Annex 2. Data to Collect and Assemble for the 5-Day Planning Activity

- Current (or previous) year populations per parish/SC/HSD/district from Uganda Bureau of Statistics (UBOS)
- HFs per HSD/SC/parish. For each HF, indicate:
  - The location of the HF (at least the parish, but if possible, the village location)
  - By color or any other mark:
    - If there is an EPI refrigerator in the HF
    - If no refrigerator and HF conducts RI by picking up vaccines from a nearby HF
  - In the black normal color HFs that do not conduct RI
- Number of doses of Penta 1, Penta 3 and measles administered by **each HF** in the previous 2 to 3 years (financial or calendar year).
- Additional baseline data:
  - Health sector work-plan
  - Information on VHTs
  - Implementing partners in the district (location and what they are doing)
  - SS
  - QRMs
  - Budget and process

Annex 3. Macro-Mapping Tools

Table 9. Example of Merged UBOS Population Data and HFs in a Macro-Mapping Excel Template

MAPPING KAMPALA CENTRAL DIVISION WARDS TO HEALTH FACILITIES

Parish/Ward where HF is located	HSD/DIVISION/HF	LEVEL	Parishes it's Resp for	Total Population	UBOS Admin. Unita and Projected total population 2014/15	
					Wards	Populations
	KAMPALA DISTRICT					
	CENTRAL DIVISION					
	KISENYI HEALTH CENTRE	H/CIV			Bukesa	12283
					Civic Centre	2047
					Industrial Area	754
					Kagugube	11744
	BIVA MATERNITY CENTRE	H/CIV			Kamwokya I	4525
					Kamwokya II	23812
					Kisenyi I	5387
	AAR ACACIA	H/C II			Kisenyi II	16916
	AAR CITY CENTRE	H/C II			Kisenyi III	7758
	FRIENDS POLYCLINIC	H/C II			Kololo I	2694
	WATOTO CLINIC	H/C II			Kololo II	2263
	BHAI MEDICAL CENTRE	H/C II			Kololo III	3987
	NAKASERO HOSPITAL	HOSP			Kololo Iv	4633
					Mengo	19825
					Nakasero I	1724
					Nakasero II	5387
	SAS CLINIC	H/C II			Nakasero III	2047
					Nakasero IV	1724
					Nakivubo Shauliyak	1939
	KOLOLO HOSPITAL	HOSP			Old Kampala	6034
	KAMPALA HOSPITAL	HOSP				
	ST.CATHERINE HOSPITAL	H/C II				
	CHILDREN'S CLINIC KAMPALA LTD	H/C II				
	MENGO DOCTOR'S CLINIC	H/C II				
	NORVIK HOSPITAL	HOSP				
	KITANTE MEDICAL CENTRE	H/C III				
	KAMPALA MEDICAL CHEMBERS	H/C II				
	KASERENA CHILDREN'S CLINIC	H/C II				
	CASE HOSPITAL	HOSP				
	MALCOM HEALTH CENTRE	H/C II				
	KAMWOKYA CHRISTIAN CARING CENTRE	H/CIII				
	CITY HALL CLINIC	H/C II				
	KATEGO HEALTH CENTRE	H/C II				
	ADVENTIST MEDICAL CENTRE	H/C III				
	PRINCETON CHILDREN'S CENTRE	H/C II				
	MASS MEDICAL CENTRE	H/C II				
	OLD KAMPALA HOSPITAL	HOSP				

Table 10. Example of UBOS Data by Administrative Unit with Estimate of Target Population

UBOS		
1	2	3
District	**2012**	
County/HSD		
Subcounty	**Total**	**Annual Target**
Parish		<1yr (4.3% of total pop.)
KAPCHORWA DISTRICT	**114,100**	**4,906**
Tingey County/HSD	**114,100**	**4,906**
Chema Sub County	**17,000**	731
Chema	**4,100**	176
Kapkwai	**3,300**	142
Munarya	**4,000**	
Ngasire	**2,700**	116
Chemosong	**2,900**	125
		0
Kapchorwa Town Counsil	**13,300**	572
Kawowo	**6,800**	292
Kokwomurya	**1,900,**	
Barawa	**4,600**	198

Figure 12. Example of Macro-Map of HF Service/Catchment Areas with Color Coding

MAPPING KABALE DISTRICT PARISHES TO STATIC HEALTH FACILITIES 26/3/2013

Parish/Ward where HF is located	HSD/SUBCOUNTY/HF	LEVEL	Parishes it's Resp for	2012 Total Pop	2012 Target Pop < 1yr	2013 Total Pop	2013 Target Pop < 1yr
	KABALE DISTRICT			491,780	21147	507,337	21815
	Kabale Municipality			46,152	1985	45,337	1949
	Kabale Central Division			12,300	529	16,500	710
Central	Kabale RRH	Hosp	Central ward	4,900	211	6573	283
Kigongi	KMC Clinic	HC II	Kigongi ward	4,000	172	5366	231
			Butobere ward	3,400	146	4561	196
	Sub-Total			7,400	318	9,927	427
Kigongi	Police Barracks						0
			Nyabikoni ward				0
							0
	Kabale North Division			16,277	700	12,037	518
Kijuguta	Rugarama	Hosp	Kijuguta	3,900	168	2,884	124
			Lower Bugongi	3,200	138	2,366	102
Upper Bugongi	St. Johns Bugongi	HC II	Upper Bugongi	2,400	103	1,775	76
			Muyanje	2,352	101	1,739	75
	Sub-Total			11,852	510	8,765	377
Rutooma	Rutooma	HC II	Rutooma	1,500	65	1,109	48
			Nyabikoni	2,925	126	2,163	93
	Sub-Total			4,425	190	3,272	141

Color codes for HF: Red = HF has EPI refrigerator; Blue = HF picks up vaccines from another HF; Black = HF does not conduct immunization.

Annex 4. RED Categorization Tool Example and Guidance

Figure 13. Example of a Completed RED Categorization Tool

Analysis of Health Facility Data using RED categorization

														Criteria
Name : KAPCHORWA DISTRICT														DPT1 coverage
Goal : Increase immunization coverage to at least 90% with all vaccines in every district														90%
Category 1 = high coverage (>90%), low drop out (<10%)														Drop-out Rate
Category 2 = high coverage (>90%), high drop-out (>10%)														10%
Category 3 = low coverage (<90%), low drop-out (<10%)														
Category 4 = low coverage (<90%), high drop-out (>10%)														

HSD	Compile population, immunization						Analyse Problem						
Sub-County	Target Population	Doses of vaccine administered			Immunization coverage (%)			Unimmunized (No.)		Drop-out (rates (%)		Identify problem		Categorize problem
Health Facility		DPT1	DPT3	Measles	DPT1	DPT3	Measles	DPT3	Measles	DPT1-DPT3	DPT1-Measles	Access	Utilization	Category 1,2,3, or 4
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
KAPCHORWA DISTRICT	1,226	992	765	967	81%	62%	79%	461	259	23%	3%	Poor	Poor	Cat. 4
Tingey HSD	1,226	992	765	967	81%	62%	79%	461	259	23%	3%	Poor	Poor	Cat. 4
Chema Sub County	111	28	19	36	25%	17%	33%	92	75	32%	-29%	Poor	Poor	Cat. 4
Chemosong	111	28	19	36	25%	17%	33%	91.5	74.5	32%	-29%	Poor	Poor	Cat. 4
Munarya Sub-county	72	70	53	79	97%	74%	110%	19	-7	24%	-13%	Good	Poor	Cat. 2
Chebonet	72	70	53	79	97%	74%	110%	19	-7	24%	-13%	Good	Poor	Cat. 2
Kapchorwa Town Council	227	286	230	226	126%	101%	100%	-3	1	20%	21%	Good	Poor	Cat. 2
Kokwomurya	21	15	12	23	73%	59%	112%	9	-3	20%	-53%	Poor	Poor	Cat. 4
Kapchorwa Hospital	200	236	189	174	118%	95%	87%	11	26	20%	26%	Good	Poor	Cat. 2
Reproductive health Uganda	7	35	29	29	538%	446%	446%	-23	-22.5	17%	17%	Good	Poor	Cat. 2

Guidance

- Using the data from the macro-map and the district biostatistician, complete the first five columns.

    - Column 1: Enter the name of the HF, under each sub-county and HSD.

    - Column 2: Enter the target populations.

    - Columns 3 to 5: Enter the number of doses of the different vaccines.

- Do not enter data into the remaining columns. These columns contain formulas that auto-calculate coverage, unimmunized children, DORs, and RED categorization based on access (Penta 1) and utilization (Penta 1–3 DOR).

Annex 5. REC Micro-Planning Tools and Process for HFs

The REC-QI micro-planning process adheres to the micro-planning process for REC, as outlined in the national guidance for REC. (*REC [RED] Uganda Health Facility Guide*)

REC-QI micro-planning is not a separate activity; however, it deliberately incorporates PDSA plans to facilitate implementation of the REC micro-plans. For example, a PDSA plan picks one activity from the REC micro-plan at any level and breaks it into smaller, step-by-step processes and action points to effect the implementation of the activity. The managerial and service delivery improvements to be tested during PDSAs as well as the other associated REC-QI activities are built into the REC micro-plans.

Stage	Tool	By whom	Activity	Comment
Orient	Health demographic data	District	5-day activity	
	1a: Situation analysis: Socio- demographic characteristics	District	5-day activity	
	1c: Situation analysis problem identification and priority setting (RED categorization)	District	5-day activity	
Immediately after Orient but before Establish and Strengthen	4a: Vaccine and other commodities supplies forecast	HSD	Immediately after 5-day activity before the first SS	
	4b: Injection and other supplies/ materials forecast	HSD	Immediately after 5-day activity before the first SS	
	6b: HF-level monitoring tool	HF – In-charge	Immediately after 5-day activity/ followed up during the subsequent SS	To be filled in at the end of every month
	Monitoring chart	HF	Immediately after 5-day activity	To be filled in at the end of every month
	Chart for plotting the DOR	HF	Immediately after 5-day activity	To be filled in at the end of every month
Establish and Strengthen	1b: Sample map of HF service area		HF VHT orientation and micro-mapping	
	2a: Situation analysis by using the RED components: strengths, causes of problems, and solutions analysis for immunization interventions	HF	Starts in the 5-day activity and completed in the HF VHT orientation	
	3a: Immunization coverage targets	HF	Starts in the 5-day activity and completed in the HF VHT orientation	
	5a: Social mapping stakeholders/partner analysis (identify influential people in the parishes/villages)	HF	HF VHT orientation	
	5b: Immunization session static and outreach plan for the HF	HF	HF VHT orientation	
	6a: Summary activity plan and budget for reaching every community	HF	Immediately after HF VHT orientation	To be completed during the ongoing SS

Annex 6. Sample Template for District RI Improvement Plan

Level of Management	Prioritized Problem	Aim Statement	Outcome Measure(s)	Time Frame	Responsible Person
District					
HSD1					
HSD2					
HSD3					
HSD4					

Annex 7. Guidance on QWITs and PDSA Work

Roles and Responsibilities of QWITs at Different Health System Levels

District Roles

- Formation of district QWIT
- District and HSD RED categorization
- Categorize HF according to RED Categorization Tool to facilitate broader problem identification and aim-setting by HSD
- How often does the district QWIT meet?

HSD QWIT Roles

- Formation of HSD QWIT
- Problem identification: access, utilization, or data quality
- Problem analysis using the fishbone tool
- Aim-setting
- HF RED categorization
- Monitor HF progress towards the achievement of the HSD aim through supportive supervision
- Develop managerial PDSA
- Meet quarterly
- Hands-on training and mentorship of HF QWITs

Health Facility Roles

- Formation of HF QWIT
- Further root cause analysis
- Developing change ideas
- Developing HF PDSA
- Developing indicators
- Meet monthly at HF
- Document PDSA progress on implementation in the minute book
- Composition—At least to include In-charge, EPI FP, VHT representative
- Provide monthly feedback to SC
- Participate in HSD QRMs—In-charge HF and EPI FP
- Data collection—qualitative (document in minute book—see below) and quantitative

Sample Forms for Documentation of PDSA Implementation in the QWIT Minute Book at HF Level

List of participants

S/N	Names	Title	Gender	Tel contact

PDSA plan format

(To be used when planning to implement a new intervention/change idea)

HSD aim:
Date when HSD aim was set :
Outcome measure: Data source:
Root cause being addressed :
Intervention/Change idea:
Process Measure: Data source:

Action Points	Start Date	End Date	Responsible Person	Data Collected and Data Source
1.				
2.				
3.				

PDSA Action Review Guide

To be used to review progress with implementation of action points for a given intervention/ change idea during the monthly health facility and HSD quarterly review meetings

Date of review:		
Intervention/Change idea under review:		
Action points agreed upon from previous meeting	**Progress with implementation of action points (ongoing, completed, not done)**	**Next steps**
1.		
2.		
3.		
4.		

PDSA Performance Review Format

(To be used when reviewing performance for a given change idea)

Intervention/change idea under review:												

Actual start date of implementation (date when first action point was implemented):

Process measure/ indicator:	Progress over the 3-month period of testing the change idea											
	Month 1				Month 2				Month 3			
	Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 6	Wk 7	Wk 8	Wk 9	Wk 10	Wk 11	Wk 12
Target												
Actual												

If PDSA is completed, indicate date when it was completed: _____

Results of PDSA, based on the process measure/indicator set _____

_____

Progress with Penta 1-3 dropout rate/Penta 1 coverage (refer to immunization charts): _____

_____

Final decision taken on PDSA :
a) Adopted (taken as tested to be part of the routine)
b) Adapted (taken as tested but with some modifications to be part of the routine)
c) Abandoned (dropped, left out)

Annex 8. Routine Data Quality Self-Assessment and Improvement (Routine DQSI)

DQSI Routine aims to continuously measure and facilitate improvement of data **accuracy and consistency** at all levels. DQS is used during internal (at the HF) and external supportive supervision

- At HFs, it focuses on HWs having a system of regular checks on the consistency and accuracy of data before using them and reporting to the next level on the monthly HMIS 105 report.
- At the district or HSD level, it focuses on the use of a tool (see Table 11 below) that is incorporated into supportive supervision checklists. The tool compares data reported in the DHIS2 by individual HFs with the data sets in the HF. The district also compares HF reports submitted with what is entered in the DHIS2.
- At the national level, MOH/UNEPI and Resource Center compare data at the national level with those at the district level and selected HFs during data verification/supportive supervision.

DQS Routine has only a few indicators, which allows it to be managed easily. The three recommended indicators for regular monitoring are the number of children given the following antigens in a month:

- Penta 1
- Penta 3
- Measles

NOTE: The indicators above can be changed to address data challenges experienced by the district, region, or country.

Table 11. Example of DQS Tool to Incorporate into the Routine Integrated Supportive Supervision Checklist

No.	Antigen	Doses recorded/reported given					Comments
		VIMCB doses used	Child Register	Tally sheets	HMIS 105	District DHIS2	
1	Penta 1						
2	Penta 3						
3	Measles						

Guidance on Using Routine DQS Tool
District/HSD Level

- To prepare for the supportive supervision, request EPI data in the DHIS2 for each HF from the district biostatistician and enter the figure into the column District DHIS2.
- At the HF, review the numbers of doses given/used for that period in the CR, the Tally Sheets, and the HF monthly HMIS 105 form. Enter these numbers in the corresponding rows and columns. The period here refers to the most recent completed month.
- Compare the figures from the different forms to assess the **accuracy and consistency** of reporting.
- Discuss the findings with the supervisee, and if there are inconsistencies, identify causes and possible solutions, and decide on action points to improve data quality.

- **NOTE:** For measles, enter the number of doses **"used"** as indicated in the Vaccine and Injection Materials Control Book (VIMCB), and compare it with the number of children given a measles vaccine in the same period. This allows monitoring of vaccine use, recording, and accountability.
- The district biostatistician, as s/he enters data from the HF monthly reports into DHIS2, should look out for outliers and can call the HF staff to clarify before entering such figures. This combined with verification data during supportive supervision should facilitate regular updating by the biostatistician of data in the DHIS2 and thus improve data quality.

Health Facility Level

During supportive supervision, confirm that all HMIS forms are available and completed, as recommended for DQS:

- CR (completed by vaccinating staff)
- Tally Sheet (completed by vaccinating staff with EPI data from the CR for each immunization session. One Tally Sheet per session allows tracking of planned against conducted sessions and segregation of static and outreach EPI data.)

  - **NOTE:** In Uganda the law requires HFs to keep the Tally Sheets for at least 3 years.

- EPI Activity Monthly Summary form (completed by EPI focal person for the HF, where staffing allows, with information from the Tally Sheets. The EPI focal person crosschecks the entries in the CR and Tally Sheet for accuracy and consistency, with reference to the VIMCB.)
- Monthly HMIS 105 report (completed by the medical records person, where this post exists, using EPI data from the EPI Activity Monthly Summary form). The medical records person crosschecks for consistency and accuracy of the figures with the previously filled forms—CR, Tally Sheets, and Summary form—for at least one antigen.
- Before submitting the HMIS 105 to the district, the HF In-charge crosschecks for any errors as data are processed from the CR, Tally Sheets, and EPI Activity Monthly Summary form and signs it. This serves as a third check point for EPI data quality before the data are reported to the district and national level through DHIS2.

Annex 9. Micro-mapping

Micro-mapping is a continuous process of identifying and assigning communities (villages) within an HF catchment area to RI service delivery points (static and outreaches). (In contrast, macro-mapping identifies the catchment area of each HF.) Staff of an HF work with its catchment area community leaders (e.g., HUMC, VHTs, and other groups, including non-traditional leaders) to identify all villages and allocate them to RI service delivery points.

Micro-mapping has three basic steps:

- Collecting inputs to micro-mapping
- Forming a working committee to produce a draft micro-map
- Harmonization

Collecting Inputs to micro-mapping

The basic inputs to micro-mapping include:

- HF catchment area (macro-map)
- List of villages per parish in the HF catchment area
- List of RI service delivery points (outreach and static) with their location by parish and village

Forming a Working Committee and Drafting a Micro-map

Members of the working committee include HF staff and HF catchment area community leaders knowledgeable about the geography of the HF catchment area.

The working committee updates the list of villages per parish obtained from the district. The committee uses their geographical knowledge of the HF catchment area to allocate villages to each of their existing RI service delivery points and come up with the first micro-map draft.

Harmonization/Finalization

- Hold a meeting with HF staff and key community leaders (e.g., HUMC, VHTs, and other opinion leaders) from each village within the HF catchment area to review and revise the micro-map draft (see micro-mapping tool below and Figure 14 for an example of a completed micro-map).
- Present the draft micro-map and update the column for villages with newly created and/or initially forgotten villages.
- Review village allocation for each RI service delivery point.
- Actively seek and respect the opinions of the VHTs, as they represent parents/guardians.
- Finalize the micro-map after it is updated with inputs from VHTs and key community leaders.

Micro-mapping Tool

_____ District

Health Facility _____

Sub-county _____ Date _____

S/N	Health Facility	Parish	Village Name	Location of Service Point (HF & Outreach)	Villages to Be Served at or near service point/near	Villages that cannot be served at either service point	Comments
1							
2							
3							
4							
5							
6							
7							

Figure 14. Example of Micro-map

S/N	Health Facility	Parish	Names of villages in the parish	Location of service point (HF & outreach)	Villages agreed upon to be served at service point	Villages that cannot be ser ved at either service point	Comments
			RUKUNGIRI DISTRICT - BUYANJA SUB-COUNTY Rubanga HC II Micro Map				
3	Rubanga HC II	Rubanga A & B	Nyarutare			Nyarutare	Proposed OR site is
			Karushanje			Karushanje	"Rubanga Catholic
			Kaamishyayo			Kaamishyayo	Church OR" however
			Kabagahe			Kabagahe	due to irregular gas
			Kishonga Upper			Kishonga Upper	supply cannot start
4			Kihengamo			Kihengamo	"Omukihoona TC OR"
			Ibumba			Ibumba	however, due to
			Omukatojo			Omukatojo	irregular gas supply
			Omukabingo		Omukabingo		Currently all villages
			Rwenyangi		Rwenyangi		in Rubanga A parish
			Kisharara		Kisharara		are served at static,
			Rwenshekye		Rwenshekye		however, for better
			Karushanje	**Rubanga Static**	Karushanje		access two new
			Kyamabare		Kyamabare		outreach (OR) sites
			Kishonga Lower		Kishonga Lower		above are proposed
			Nyakasharara		Nyakasharara		
			Rusharara		Rusharara		

Establishing a New Routine Immunization Schedule (during Harmonization)

The harmonization meeting, based on the villages allocated to RI service delivery points, may change the location of the outreach to a different village in order to improve access by all the allocated villages. To establish a new RI schedule (see Figure 15 below for an example):

- Actively engage the VHTs to decide on the most appropriate day of the week and time for their RI session.

- Choose a day and time that does not have other village activities that may compete with the outreach for people, i.e., avoid days of the week with activities that pull away people.

- Ensure that the time of the RI session fulfills three key essentials: child, HW, and vaccine are in the same place, on the same day, and at the same time for vaccinations to take place.

- Identify days for the sessions as days of the week of a month (e.g., Monday of the first week of the month or Wednesday of the third week of the month) rather than dates that require scheduling every month because the date for that particular day keeps changing every month.

- Make note of hard-to-reach villages that cannot be reached via static or outreach services so HF staff can later work toward reaching these locations. Follow-up may include:

  - Negotiating with neighboring HFs if residents of the hard-to-reach villages can more easily reach neighboring static or outreach sites, or if the hard-to-reach villages could be included in existing outreach as a mobile point, which is visited before or after the scheduled outreach.

  - Engage leaders of hard-to-reach villages to accept the day and the time before or after the scheduled outreach.

  - Ask leaders to provide an appropriate place where HWs can meet to vaccinate their children.

Whatever the case, the HF staff and community leaders need to ensure that these hard-to-reach villages receive RI services on a regular basis.

Figure 15. Example of a New RI Schedule

RUKUNGIRI DISTRICT - BUYANJA SUB-COUNTY Rubanga HC II Micro Map					
Plan/schedule for immunization agreed upon with VHTs					
OLD PLAN		NEW PLAN/SCHEDULE			
S/N	Previous place, Day & time	New place	Day & week of month	Time of the day	Comments/VHT contact
1	Rubanga Static	Rubanga static	Every day	Whole day	
2	Nil	Omukihoona TC OR	Tuesday 2nd week	2 - 5.00 pm	
3	Nil	Rubanga Catholic Church OR	Wednesday 3rd week	2 - 5.00 pm	
4					
5					

Planning for the Way Forward

- Agree when the new RI schedule will start.
- Decide how the VHTs and community leaders will communicate the revised outreach sites, schedule, and starting dates to their village residents.
- Select the focal point VHT (one of the VHTs of the village where the outreach is located).
- Record the VHT's name and the telephone contact to facilitate communication and coordination of the outreach sessions.

- Outline how the VHTs assist the HF staff during the session and also provide post-session follow up, including:

  - Help with left-out and defaulter tracing—that is, newborns who have not yet come for their first vaccination and children who started but have not finished their full vaccination schedule, respectively.

Reviewing and Reorganizing the Child Register for Each RI Service Delivery Point

- Ensure that each RI service delivery point has a separate CR.
- Allocate pages in the register for each village served by the RI service delivery point.
- Allocate some pages at the end of the CR to visitors—children from outside the service delivery point villages or outside the HF catchment area.

  - If the visitor is from the HF catchment area and comes for a static session, register/update the appropriate CR.

  - If the visitor is at outreach, register the child in the visitors section of the CR of that outreach point.

- Use counter books for service delivery points to supplement the preprinted CR in order to minimize costs (see Figure 16 below for an example).

Figure 16. Example of a Counter Book as a Child Register for an RI Service Delivery Point

Using a VHT Child Register

- Give all VHTs an exercise book during harmonization meetings to use as a VHT CR (see Figure 17 below for an example).

- Explain how to use the VHT CR:

  - Register all children and all newborns in the VHT's village in the CR, irrespective of their immunization status.

  - Use the CRs to facilitate tracking left-outs and defaulters.

  - Update regularly the CR for the RI service delivery point (HF-based CR) using information in the VHT CR.

  - Update the VHT CR, using information from the HF-based CR.

Figure 17. Example of VHT Child Register
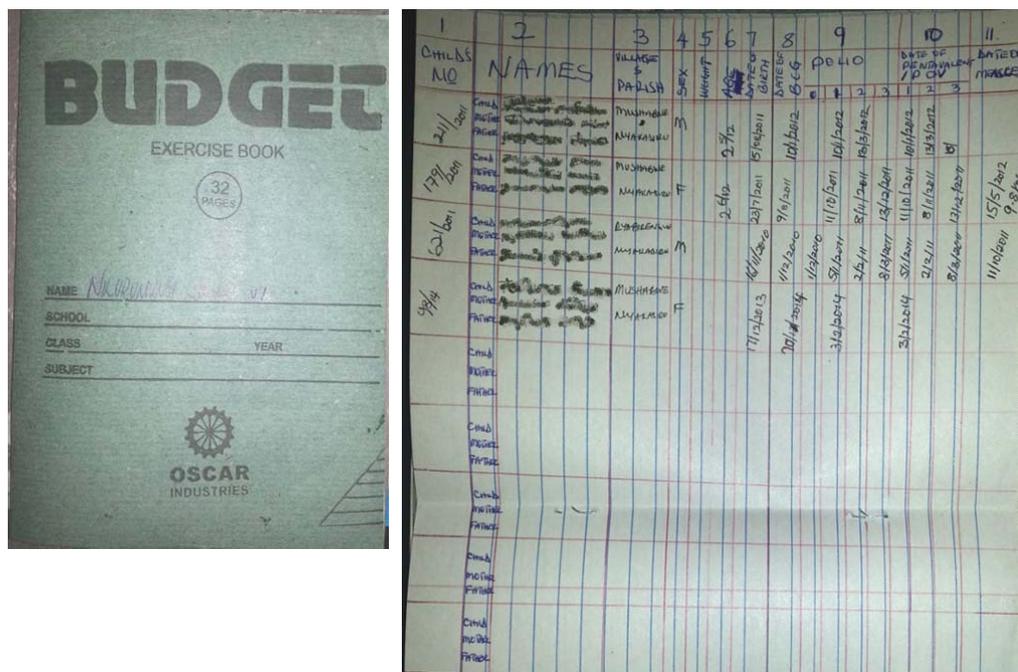
Annex 10. Sample Focused Supportive Supervision Checklist

Busia District: Checklist for Health Facility Integrated Supportive Supervision, July 2015

HF: _____ **HSD:** _____ **Date:** _____

Time of arrival: _____ **Departure:** _____

Supervisors
Name, Title

1. _____
2. _____
3. _____
4. _____

Supervisees
Name, Title

5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Themes:

A. Infection control and health care waste management
B. General information
C. Routine immunization (RI)
D. Antenatal, maternity, and postnatal services
E. HIV services
F. Debriefing meeting with the entire health facility team

A. Infection Control and Health Care Waste Management

1. Is the facility clean?   Tick Yes ____ No ____

2. Are there color-coded bins to segregate wastes?   Tick Yes ____ No ____

3. Are disinfectants adequately available?   Tick Yes ____ No ____

B. General Information

1. Do you have your catchment target population for 2015/2016?   Tick Yes ____ No ____

    •   If yes, are they displayed?   Tick Yes ____ No ____

2. Does the Health Facility have a work-plan for 2015/2016 in place? Observe   Tick Yes___ No ___

   • If No, why? _____

3. Does the health facility hold staff meetings?   Tick Yes ___ No ___
   If Yes:

   • Are minutes available (observe)   Tick Yes ___ No ___

   • When was the last meeting held?   (Capture date) _____

C. Routine Immunization (RI)

1. Does the health facility have a refrigerator?   Tick Yes ___ No ___
   If yes:

   • Has the temperature in the refrigerator been recorded twice daily for the last 3 months to date?
     (Observe)   Tick Yes___ No___

   • Has the health facility had a stock-out of any antigen to date?   Tick Yes___ No___

   • If yes, state which vaccine(s) and for how long it has been out of stock:

     _____

2. Does this health facility have an RI schedule displayed? (Observe)   Tick Yes ___ No ___

3. Does the facility have the EPI performance monitoring chart pinned up for the current financial year
   2015/2016? (Observe)   Tick Yes___ No___

   • If No, support the health facility draw and display the routine immunization monitoring charts
     (DPT 1 and 3 cumulative chart, DPT 1 and 3 noncumulative chart, DPT 1–3 drop-out rate
     chart. Comments: _____

4. Routine Data Quality Self-Assessment and Improvement

Table 1. Perform recounts of numbers of doses of DTP3 administered to reobtain data for the following data element for April–June 2015

Antigen	Months	Recount from Child Register	Re-summation from the Tally Sheets	Figure Recorded in the Hard Copy for HMIS 105 at the Health Facility
DPT 3	April 2015			
	May 2015			
	June 2015			

   • If any discrepancies, what are the reasons?_____

     _____

   In case of any discrepancy, discuss with the staff of the HF how it can be avoided through: The use of a CR as the primary data collection tool; every child vaccinated at any service delivery point (static and outreach) is entered/updated in the CR and routine Data Quality Self-Assessment & Improvement is done by the HF EPI focal person followed by the In-charge of the HF before submission of monthly reports to the DHO/HSD.

D. Antenatal, Maternity, and Postnatal Services

1. Does the health facility offer the following MCH services below? (tick what is offered)

   - Antenatal   Yes____ No____

   - Deliveries   Yes____ No____

   - Postnatal   Yes____ No____

   if yes to any of the services above:

   - How many midwives does this health facility have? _____

   - Table 2. Review records for April–June 2015 and fill in the table below.

Enter numbers for each service for the last 3 months	April 2015	May 2015	June 2015
ANC attendance			
Postnatal attendance			
Deliveries			

   - Does the health facility have monitoring charts with targets for the current financial year (2015/2016) displayed to monitor performance? (Observe)   Tick Yes ____ No ____

   - What challenges do you face in carrying out any of the services above at this health facility? _____

     _____

E. HIV Services

1. Table 3. What HIV preventive/care services do you offer? (fill in table below)

HIV Service	Funder

2. Do you have updated documentation journals for HIV indicators? (observe)   Tick Yes ____ No ____
   If yes:

   - When was the last meeting held? Observe minutes and fill in date _____

   - What action points did you document in the last meeting? (observe/review minutes) _____

     _____

3. How many HCT outreaches did you conduct in the last 3 months and who supported? _____

   _____

4. How many community dialogue meetings occurred in the community and who supported? _____

   _____

5. What are the critical challenges you are facing with offering HIV preventive/care services? _____

   _____

F. Debriefing Meeting with the Entire Health Facility Team

1. Discuss the Routine Immunization (RI) problem the health facility is addressing/working on for the next 3 months (July–September 2015). Summarize the information in the table below.

Table 4. Summary of Health Facility RI PDSA for July–September 2015

RI problem being addressed: _____		
Changes agreed upon for implementation to solve the RI problem above: 1. _____ 2. _____ 3. _____		
Key Action Points to Address the Root Causes	**Time Frame**	**Responsible Person**

Note for emphasis by supervisors: The HF QWIT should always review progress of implementing the action points during their meetings.

2. Discuss with health facility team **actions for follow up in previous supportive supervision** (review the Health Facility Supportive Supervision Book) and fill in table below:

Table 5. Status on Actions for Follow-Up in Previous Supportive Supervision

Action Point	**Resolution Status**

3. Outline gaps/areas of improvement identified during this supervision:
   - i. _____
   - ii. _____
   - iii. _____
   - iv. _____
   - v. _____

4. Discuss with health facility team the overall **actions for follow up for this supportive supervision** and fill in the table below

Table 6. Summary of Action Points for Follow-Up

Action Points	**Time Frame**	**Responsible Person**

5. Discuss and outline recommendation for this health facility as per this supportive supervision.

    i. _____

    ii. _____

    iii. _____

END

G. Busia District Terms of Reference July 2015 Integrated Supportive Supervision

Purpose

The purpose of this supportive supervision is to give on-site support, coaching, and mentoring to health facility staff to improve performance in the themes outlined in the checklist (A. Infection Control and Health Care Waste Management; B. General Information; C. Routine Immunization (RI); D. Antenatal, Maternity, and Postnatal Services; E. HIV Services; F. Debriefing Meeting with the Entire Health Facility Team).

- Two health facilities will be support supervised per day beginning July 13–15, 2015.

- District supervisors will work in pairs backstopped by the Mbale Regional Supervisor and MCSP.

- On July 16, all supervisors will convene to analyze the supervision findings, write the supportive supervision report, and debrief the District Health Officer.

Onsite tasks of supervisors

1. Discuss with the health facility team their catchment target population for 2015/2016 and guide them on how to fill in the:

    - Immunization monitoring chart (both cumulative and noncumulative)

    - Immunization dropout chart

    - ANC monitoring chart

    - Deliveries monitoring chart

    - Postnatal monitoring chart

    - Tool 1b: Health facility demographic data

    - Form to summarize health facility routine immunization PDSA for July–September 2015

2. Leave the health facility when the above forms (2015/2016) have been strategically displayed on the wall for continuous updating and use.

3. Hold a debriefing meeting with the entire health facility team/staff and discuss theme **F** of the checklist (status of previous supportive supervision actions, today's findings, action points, and recommendations—**see details in the checklist**).

4. Document today's supportive supervision findings, action points, and recommendations in the Health Facility Supportive Supervision Book.

Tools to take per health facility

- Immunization monitoring chart (both cumulative and noncumulative)
- Immunization dropout chart
- ANC monitoring chart
- Deliveries monitoring chart
- Postnatal monitoring chart
- Tool 1b: Health facility demographic data
- Form to summarize health facility routine immunization PDSA for July–September 2015

Annex 11. Sample Supportive Supervision Report

Report on integrated supportive supervision to health facilities Busia district

Name and title of staff on the team:	**Name Designation Phone contact** Milly Namaalwa DTO/USAID-MCSP 0772457550
Reporting Period	JULY 2015
Region	BUSIA
	 MCSP DTO mentoring supervisee in Buwembe HC III Busia on using monitoring charts (July 2015).
	PLACE(S) VISITED:DATE(S): 20 health facilities July 13–15, 2015 District Health Office July 16, 2015
Commencement date:	July 12, 2015
End date:	July 17, 2015

1. Introduction

Busia District is one of the five former USAID MCHIP districts and is now being supported by USAID's Maternal and Child Survival Program (MCSP) to implement activities in the Sustain stage. In this stage, MCSP planned and supported the district to carry out Integrated Supportive Supervision in 20 out of 29 health facilities of Busia District (Habuleke HC II, Sikuda HC II, Namungodi HC II, Buwembe HC II, Namasyolo HC II, Buwumba HC II, Bumunji HC II, Buhehe HC III, Sibona HC II, LuminoFocrev HC, Lord of Lordoues Lumino, Majanji HC II, Busiime HC II, Mundindi HC II, Musichimi HC II, Lunyo HC III, Mawero HC II, Amonikakinei HC II, Tiira HC II, and Nabulola HC). The other nine health facilities had already been supervised by July 2015 with support from the Strengthening Decentralisation Systems (SDS) Program.

The activity was scheduled and took place July 12–17, 2015, coordinated by Milly Namaalwa, MCSP/DTO, with technical support from Dr. Amongin Mary from the Mbale EPI Regional Office.

1.1. Objectives

1.1.1. Main objective

To conduct integrated supportive supervision for 20 health facilities in Busia District, July 12–17 2015

1.1.2. Specific objectives

1. To provide onsite support to health facility teams in the identified performance areas

2. To follow up on the previous supportive supervision recommendations

3. To support the district team in writing the supportive supervision report

4. To brief the DHO about the supportive supervision (SS) activity and areas that needed urgent attention

2. Methodology

2.1. Preparatory phase

In an effort to continue building the capacity of district health teams in carrying out SS, prior communication was made to the district guiding them to review their current performance gaps to inform development of an appropriate checklist. Unlike the previous SS activities supported by MCHIP/MCSP, this time, for purposes of sustainability and ownership, the district took the lead to develop the checklist and sought the program's technical input (see **Annex 10** Busia District: Checklist For Health Facility Integrated Supportive Supervision, July2015).

The checklist was developed under six themes: A. Infection Control and Health Care Waste Management; B. General Information; C. Routine Immunization (RI); D. Antenatal, Maternity, and Postnatal Care Services; E. HIV Services; and F. Debriefing Meeting with the Entire Health Facility Team. In addition, the program guided the DHT to come up with Terms of Reference (See **Annex 10, page 79** Busia District Terms of Reference, July 2015, Integrated Supportive Supervision) to enable all supervisors to have the same deliverables while at the targeted health facilities.

2.2 Field visits

Four teams of district supervisors being backstopped by MCSP DTO and the Regional EPI Supervisor reached out to 20 health facilities (July 13 – 15, 2015). The team administered the checklist using different data collection methods deemed appropriate for each theme and the questions for each theme. Among these methods were observations and interviews with hands on practice (coaching and mentoring) to meet the expected deliverables.

Immediate feedback was given to the supervisee(s) one-on-one and through convening a debriefing meeting with all staff available at each health facility to share the overall findings. Documentation of findings was thereafter done in the health facility supportive supervision books/files.

Following the 3 days of field supportive supervision, supervisors convened on July 16, 2015, to analyze the field findings, write the report and debrief the District Health Officer.

3. Supportive supervision findings

3.1. Positive observations

- The majority of HFs were clean, utilizing color-coded bins and with disinfectant (Jik) available most of the time, apart from Buhehe, Sibona, Tiira, and Buwembe HFs, which needed to improve on the cleanliness of the facilities and much more apply the 5s.
- More than half of the health facilities supervised had fridges (12/20) and 8/12 had updated RI schedules displayed.
- Almost half of the health facilities supervised offered ANC and delivery services.
- A majority of health facilities with refrigerators were charting vaccine temperatures twice daily, apart from Nabulola (temperature was last charted on July 7, 2015) and Buwembe (no thermometer in the fridge).
- 4/20 health facilities offered HIV services (Lumino HC III, Nabulola, Buhehe, and LuminoFocrev). Of these only 3 had updated documentation journals (Lumino HC III, LuminoFocrev and Buhehe).

3.2. Observed performance gaps

- The majority of HFs had no target catchment populations for 2015/2016; only seven HFs (Mudindi, Musichimi, Buwumba, Namungodi, Namasyolo, Lord of Lordoues Lumino, and Buhehe) had these populations.
- 17 HFs did not have work plans for 2015/2016. The In-charges attributed this to lack of guidelines from their respective HSDs. Only three HFs had the current financial year work plans (Namungodi, Lunyo HC III and Sibona).
- Few HFs had held staff meetings since the calendar year began (Mundindi—7/7/15, Majanji - 09/06/2015, Buwumba - 20/6/2015, Namasyolo - June 2015, Sikuda - 19/6/15, Lord of Lordoues Lumino -26/06/2015 and LuminoFocrev - 28 May 2015). Tiira HC II attributed their failure to hold the meetings to low staffing numbers at the sites, i.e., only 1–2 staff. Instead, they opted to participate in Health Unit Management Committee Meetings, which were also not regularly held, and there was no documentation to confirm their occurrence.
- Routine Immunisation data discrepancies were largely observed in 17/20 HFs. Only three HFs had no data discrepancies (Busiime, Musichimi and Habuleke for the period April–June 2015.
- CRs were largely not filled. Staff attributed this to not always carrying them to outreaches. In addition, there was noticeable poor filing of Tally Sheets.
- There was low postnatal care (PNC) service delivery and data capture in health facilities where the service is offered. Facilities claimed not to have PNC registers.
- The majority of HC IIs were not offering HIV services apart from referring clients to the next level.
- Low staffing levels of midwives and inadequate equipment supply in HFs was given by the HF teams as one of the challenges affecting delivery of Maternal and Child Health Services.

4. Support provided by the Supervision Team

- Distributed the current UBOS district population figures to each Health Facility as per their catchment areas
- Coached supervisees on calculating the target populations for 2015/2016 and left charts displayed per Health facility

4.1. Busia DHO mentoring supervisees on using monitoring charts

- Supported health workers on how to use performance monitoring charts for Routine Immunisation, ANC, Deliveries and PNC for 2015/2016.
- Discussed with health workers the effect of data discrepancy and guided them on how to conduct routine data quality self-assessments and improvement (review relevant data collection tools that feed into the HMIS 105 before submission of report to the HSD/district.
- Held post–supportive supervision meeting chaired by the ADHO with all the supervisors to analyse field findings and debriefed the DHO.

5. Lessons Learnt

- For successful implementation of any given activity, there should be deliberate efforts to continuously build capacity of lead teams on the ground. Despite the supportive supervision TOT where the DHT and other peripheral supervisors were engaged, the team still needed technical guidance and input to comprehend the process.
- In addition, transition of lead staff in any given activity leaves a gap; hence, ongoing updates are very fundamental in skills building.
- In the event of few technical staff at the District Health Office, the DHT needs to identify and co-opt active health workers from the hospital, HC IV and III to form a solid SS team.
- The DHT should always deliberately convene and further discuss the findings of any conducted supervision and/or activity to be able to elicit performance gaps to focus on in the subsequent supportive supervision activities.

6. Way forward

6.1. By the DHT

	Action Point	Time Frame	Responsible Person
1	Supervisors to hold prior meetings to develop and understand the checklist and terms of reference before moving out to the field	Effective July ongoing	ADHO
2	District to conduct an EPI technical supervision towards addressing performance gaps (use of child registers, filling out Tally Sheets, monitoring RI monthly performance, action points on RI PDSA, etc.) established in the July 2015 supportive supervision (start with the low-performing health facilities)	August 2015	ADHO
3	Make early communication to supervisees on every scheduled supportive visit	Effective July ongoing	ADHO
4	HSD heads to share guidelines with Lower level health facility to facilitate development of 2015/2016 work plans	By September 2015	Dr. Ouma
5	Update the list of HF EPI focal persons (FPs) in the district	By July 30, 2015	Sr. Sarah
6	HF EPI FPs to take lead in compiling monthly RI data and filling in the EPI section in HMIS 105 (District EPI FP to communicate this to all In-charges)	July 30, 2015	District EPI FP
7	Share July supportive supervision findings with In-charges in the upcoming HSD QRMs	Early August 2015	ADHO

6.2. Debrief to the DHO

6.2.1. DHO actions points

- All health facility In-charges were to be met to discuss their performance plan for the current financial year. The key areas of focus would be work-plan development and staff appraisals, among others.

- Suggest that DHO input into the upcoming QRM agenda tasking the HSD teams/HF In-charges to report on their overall health service delivery indicators and set targets for the subsequent quarters and/or financial year.

Annex 12. HC III Summary Report for Leaders

Keeping Sub-County Leaders Involved in Routine Immunization

HC III monthly reporting form

District: _____   HSD: _____

Sub county: _____

Name of In-charge: _____   Signature: _____

Date: _____   Month of reporting: _____

1	Routine Immunization broad problem of HSD:		
2	Number of routine immunization outreaches	Planned	Conducted
3	DPT 1 coverage or DPT 1–3 DOR or Data quality (negative DPT 1–3 DOR)	Planned improvement in 3 months (_____)	Cumulative achievement to date
4	**Priority** challenges of HFs that the HF QWITs have planned to handle		
5	**Priority** challenges requiring S/C leaders attention clearly spelt out		

Annex 13. Child Tally Sheet

HMIS Form 073a: Child Tally Sheet

Description and instructions

Objective: To record all child immunizations, weight for age at measles, vaccination, Vitamin A supplementation and de-worming for children

Copies: One copy which stays at health unit

Responsibility: In-charge child health and immunization

Procedure

1. For immunizations, weight for age, Vitamin A administration and de-worming, tally the information at the moment you give the service to the child. Do not wait until the end of the month, as it will be difficult to tally the information from the register. The register can be used to double-check the Tally Sheet totals.

2. When you weigh the child, tally either "above the bottom line" or "below the bottom line" on the Tally Sheet. Adding these two figures together should tell you the number of children weighed in the month.

3. For Vitamin A administration, only tally doses given for routine supplementation. Do not tally Vitamin A doses given for treatment of severe malnutrition, measles, or other conditions.

HMIS Form 073a: Child Tally Sheet

Health Facility Name _____ Date started _____

Date finished _____ Static/Outreach site/School_____

Use a separate Tally Sheet each day of vaccination

Antigen	Under One Year Of Age				One To 4 Years Of Age			
	Male	Male Total	Female	Female Total	Male	Male Total	Female	Female Total
BCG	00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000		
Protection at Birth for TT	00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000					
POLIO 0	00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000					
POLIO 1	00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000		
POLIO 2	00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000		

Antigen	Under One Year Of Age				One To 4 Years Of Age			
	Male	Male Total	Female	Female Total	Male	Male Total	Female	Female Total
POLIO 3	00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000	
IPV	00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000	
DPT-HepB-Hib 1	00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000	
DPT-HepB-Hib 2	00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000	
DPT-HepB-Hib 3	00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000	
PCV 1	00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000	

Antigen	Under One Year Of Age				One To 4 Years Of Age			
	Male	Male Total	Female	Female Total	Male	Male Total	Female	Female Total
PCV 2	00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000	
PCV 3	00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000	
Rotavirus 1	00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000	
Rotavirus 2	00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000	
Rotavirus 3	00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000	
MEASLES	00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000	

Antigen	Under One Year Of Age				One To 4 Years Of Age			
	Male	Male Total	Female	Female Total	Male	Male Total	Female	Female Total
FULLY IMMUNIZED	00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000 00000					
RECEIVED Long-lasting insecticidal nets	00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000	

Children Weighed At Measles Vaccination

Target	Under One Year Of Age				One To 4 Years Of Age			
	Male	Male Total	Female	Female Total	Male	Male Total	Female	Female Total
NORMAL WEIGHT	00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000	
UNDER WEIGHT (BELOW - 2SD LINE)	00000 00000 00000 00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000	

Target	Under One Year Of Age				One To 4 Years Of Age			
	Male	Male Total	Female	Female Total	Male	Male Total	Female	Female Total
OVER WEIGHT (ABOVE +3SD LINE)	00000 00000 00000 00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000 00000 00000 00000 00000 00000 00000	
TOTAL								
STUNTING (BELOW -2SD)	00000 00000 00000 00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000 00000 00000 00000 00000 00000 00000	

Vitamin A Supplementation

Target	Under One Year Of Age				One To 4 Years Of Age			
	Male	Male Total	Female	Female Total	Male	Male Total	Female	Female Total
CHILDREN 6 TO 11 MONTHS THAT HAVE RECEIVED 1ST DOSE IN THE YEAR	00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000					
CHILDREN 6 TO 11 MONTHS THAT HAVE RECEIVED 2ND DOSE IN THE YEAR	00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000					
CHILDREN 12 TO 59 MONTHS THAT HAVE RECEIVED 1ST DOSE IN THE YEAR					00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000	

Target	Under One Year Of Age				One To 4 Years Of Age			
	Male	Male Total	Female	Female Total	Male	Male Total	Female	Female Total
CHILDREN 12 TO 59 MONTHS THAT HAVE RECEIVED 2ND DOSE IN THE YEAR					00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000	

De-Worming

Target	One To 4 Years Of Age				5 To 14 Years Of Age				School Children (5 To 14 Years)			
	Male	Male Total	Female	Female Total	Male	Male Total	Female	Female Total	Male	Male Total	Female	Female Total
CHILDREN THAT HAVE RECEIVED 1ST DOSE IN THE YEAR	00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000	
CHILDREN THAT HAVE RECEIVED 2ND DOSE IN THE YEAR	00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000		00000 00000 00000 00000 00000 00000 00000 00000	

Name of the vaccinator_____ Signature_____

Annex 14. Health Unit EPI Attendance Monthly Summary Form

Health Unit EPI Attendance Monthly Summary

District _____ Health Facility_____ Month_____

Where RI Session Held	Static		Outreach 1		Outreach 2		Outreach 3		Outreach 4		Outreach 5		Outreach 6		Outreach 7		Outreach 8		Subtotal Outreaches		Total	
Name of Outreach																						
Category	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
BCG - Under 1 year																						
1 to 4 years																						
Protection at Birth for TT																						
Polio 0 – Under 1 year																						
1 – Under 1 year																						
1 – 1 to 4 years																						
2 – Under 1 year																						
2 – 1 to 4 years																						
3 – Under 1 year																						
3 – 1 to 4 years																						
DPT-HepB-Hib																						

Where RI Session Held	Static		Outreach 1		Outreach 2		Outreach 3		Outreach 4		Outreach 5		Outreach 6		Outreach 7		Outreach 8		Subtotal Outreaches		Total	
Name of Outreach																						
Category	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
1 – Under 1 year																						
1 – 1 to 4 years																						
2 – Under 1 year																						
2 – 1 to 4 years																						
3 – Under 1 year																						
3 – 1 to 4 years																						
PCV																						
1 – Under 1 year																						
1 – 1 to 4 years																						
2 – Under 1 year																						
2 – 1 to 4 years																						
3 – Under 1 year																						
3 – 1 to 4 years																						
ROTA VACCINE																						

Where RI Session Held	Static		Outreach 1		Outreach 2		Outreach 3		Outreach 4		Outreach 5		Outreach 6		Outreach 7		Outreach 8		Subtotal Outreaches		Total	
Name of Outreach																						
Category	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
1 – Under 1 year																						
1 – 1 to 4 years																						
2 – Under 1 year																						
2 – 1 to 4 years																						
3 – Under 1 year																						
3 – 1 to 4 years																						
Measles – Under 1 year																						
- 1 to 4 years																						
Fully Immunized – Under 1 year																						
Children weighed																						
Children under weight (below line -2SD)																						
Children over weight (above line +3SD)																						

Where RI Session Held	Static		Outreach 1		Outreach 2		Outreach 3		Outreach 4		Outreach 5		Outreach 6		Outreach 7		Outreach 8		Subtotal Outreaches		Total	
Name of Outreach																						
Category	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Total number of children weighed																						
Vitamin A given to children																						
1st Dose in year- Under 1 yr																						
1st Dose in year- 1 -4 yrs																						
2nd Dose in year- Under 1 yr																						
2nd Dose in year- 1 -4 yrs																						
De-worming																						
1st Dose in year – 1 - 4 yrs																						
1st Dose in year- 5 - 14 yrs																						
2nd Dose in year- 1 - 4 yrs																						

- REC micro-planning tools (Annex 5. REC Micro-Planning Tools and Process for HFs)
- Practice processing data from Child Register to Tally Sheet and Monthly Summary.
- Introduce EPI monitoring charts (see

- Annex 16. EPI Monitoring Charts) and gas cylinder tracking form (see Annex 15)
- Practice processing data from monthly summary and drawing monitoring chart.
- Present and discuss routine Data Quality Self-Assessment and Improvement (see Annex 8. Routine Data Quality Self-Assessment and Improvement (Routine DQSI)).
  - Point out that Routine DQSI is an easy-to-use method of improving data quality that districts and HFs can carry out regularly.
- Describe the REC-QI micro-planning process (see Annex 5. REC Micro-Planning Tools and Process for HFs).
- Introduce micro-mapping (see Annex 9. Micro-mapping).

Outputs:

- Familiarity with the use of special REC-QI as well as routine EPI tools
- Micro-mapping introduced

Day 5 of Planning for REC-QI Implementation (District Council Sensitization and Involvement in the Plan to Improve Routine Immunization (RI))

Definition:

- One-day meeting to engage district leaders in understanding and supporting improvements in RI

Participants at the District Council Sensitization Meeting

- All district councilors
- SAS
- SC chairperson
- Heads of departments and other key stakeholders.

Purposes:

- Familiarize district councilors, HODs, and other stakeholders on REC-QI
- Obtain inputs, advice, and support from these stakeholders on RI Improvement Plan

Main Activities:

- Prepare an agenda based on the sample agenda in the training guide.
- Give an overview of REC-QI approach.
- Show and discuss the macro-map of HF catchment areas.
- Present the baseline findings and the broad RI problems based on RED Categorization.
- Introduce and explain the draft district plan to improve RI.
  - Solicit inputs, advice, and support.
  - Advocate for endorsement and support of the district RI improvement plan.
- Encourage the leaders to think about how to sustain REC-QI and the improvements it produces.
- Describe the next steps of REC-QI introduction to the district.

Outputs:

- Documentation of leaders' statements of commitment to and support for the RI Improvement Plan and REC-QI.

Annex 15. Gas Cylinder Tracking Form

TRACKING GAS USAGE

District:	HF			Date:	

A - Previous Delivery

Delivered by:_____ Sign:_____

Received by:_____ Sign:_____

Source of cylinder	Full Cylinders			Empty Cylinders Collected	Comment
	Balance at hand	Number Delivered	Total for the month		
Shell (U) LTD					
Total (U) Limited					
TOTAL					

B - Distribution list of cylinders in the previous delivery

Name of Health Facility	Cylinders			Receivers details	
	Full (Received)	Empty (Issued)	Date	Signature	Name
Total cylinder transactions					

A - Current Delivery

Delivered by:_____ Sign:_____

Received by:_____ Sign:_____

Full Cylinders

Annex 16. EPI Monitoring Charts

Ministry of Health

Immunization monitoring chart

Cumulative Chart

District_____HSD_____HU_____FY_____

Antigens DPT-HepB+Hib 1&3   **Under 1 year Population**_____

Key:

DPT 1

DPT 3

Month	J	A	S	O	N	D	J	F	M	A	M	J
Monthly DPT-HepB+Hib 1 coverage												
Cumulative DPT-HepB+Hib 1 total (Plot this)												
Monthly DPT-HepB+Hib 3 coverage												
Cumulative DPT-HepB+Hib 3 total (Plot this)												

Note: 1. Remember to display and update this chart monthly. 2. Always share this information among your selves for appropriate action

Ministry of Health

Immunization monitoring chart

Non-cumulative Chart

District_____**HSD**_____**HU**_____**FY**_____

Antigens: DPT-HepB+Hib 1&3   Under 1 year Population_____

	J	A	S	O	N	D	J	F	M	A	M	J
Key:												
DPT 1												
DPT 3												
Month	J	A	S	O	N	D	J	F	M	A	M	J
Monthly DPT-HepB+Hib 1 coverage (Plot this)												
Monthly DPT-HepB+Hib 3 coverage (Plot this)												

Note: 1. Remember to display and update this chart monthly.

2. Always share this information among your selves for appropriate action

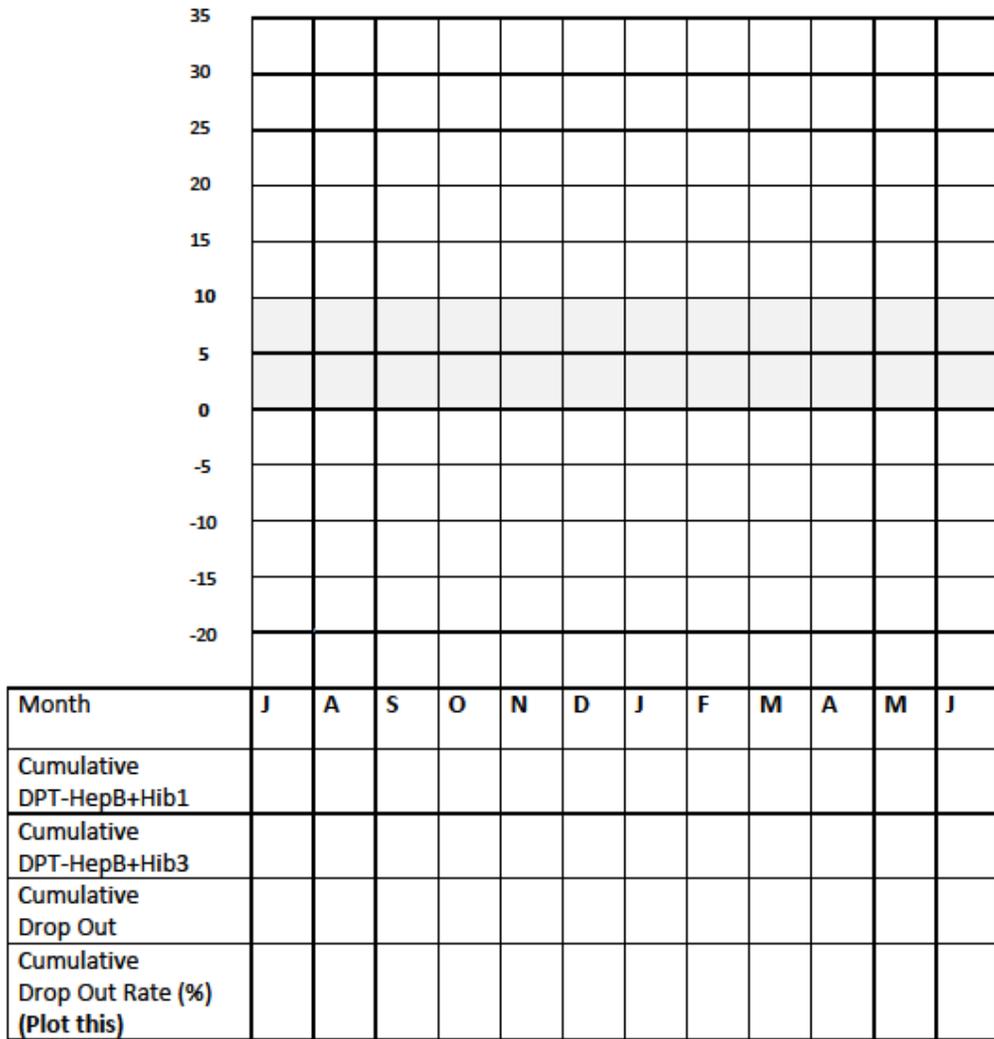**Ministry of Health**
Drop Out monitoring chart

District_____HSD_____HU_____FY_____

Antigen_____ **Under 1 year Population** _____

	J	A	S	O	N	D	J	F	M	A	M	J
Month	J	A	S	O	N	D	J	F	M	A	M	J
Cumulative DPT-HepB+Hib1												
Cumulative DPT-HepB+Hib3												
Cumulative Drop Out												
Cumulative Drop Out Rate (%) (Plot this)												

Dropout Rate = Cumulative DPT-HepB+Hib1 - Cumulative DPT-HepB+Hib3   X 100
_____
Cumulative DPT-HepB+Hib1

Annex 17. Sample Agenda for VHT Orientation & HF Micro-Planning Exercise

TIME	ACTIVITY/TOPIC	RESPONSIBLE PERSON
Day One: Preparatory meeting—Orientation of health workers		
8:00–8:30 a.m.	Registration, Introduction and Administrative Issues	District FP
8:30–9:00 a.m.	Pre-test	DHO
9:00–9:10 a.m.	Opening remarks	
9:10–9:15 a.m.	Workshop objectives	Supporting partner
9:15–10:30 a.m.	Immunization concepts: • Definition • Benefits • RI schedule • RI contraindications, side effects, adverse effects following immunization (AEFI), and community case detection District RI performance for July–Sept 2015	
10:30 –11:00 a.m.	*Morning Break Tea*	
11:00 –12:00 p.m.	Micro-planning (Micro-mapping of catchment area, selection of service delivery points, predictable RI schedule)	Supporting partner
12:00 –12:45 p.m.	Data collection tools Child Register Child Health Card Mother Passport	Supporting partner
12:45–1: 15 p.m.	Briefing VHT about the HF PDSA and progress on action plan implementation.	Supporting partner
1:15–2:00 p.m.	*Lunch Break*	
2:00–2:30 p.m.	Roles of VHT at different levels Community HF level	Supporting partner
2:30 –3:00 p.m.	QWIT (Structure, roles, and responsibilities of VHTs)	Supporting partner
3:00–3:15 p.m.	Discussion	DHE
3:15–3:45 p.m.	Post-test	Supporting partner
3:45–4:10 p.m.	Way forward & Closure	DHO
4:10–4:40 p.m.	Distribution of logistics/training materials	District FP
4:40 p.m.	*Departure*	
Day Two: Mobilization and planning for the HF meetings		
Day Three: Health worker and VHT meeting at health facility		
Day Four: Submission of reports and accountabilities to the district		