Building Resilient Management of Immunization Programs at Subnational Levels

Implementation of RED-QI in Ethiopia and Uganda Shows How the Approach Strengthens the Ability of Immunization Programs to Respond Effectively to Problems

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BACKGROUND

The Importance of Resiliency in Immunization Programs

Vaccines are one of the world's most successful, cost-effective health interventions, with overwhelming evidence demonstrating how they save lives and improve health and well-being globally. The effectiveness and reach of immunization programs has increased over the past 20 years, but challenges persist in both achieving and sustaining high levels of protection against vaccine-preventable diseases.

Challenges in ensuring equitable access to vaccines are still widespread, especially among vulnerable and hard-to-reach populations.[1] The need for equity in immunization is central to Gavi's strategic plan for 2021-2025 (Gavi 5.0) and the recently launched Immunization Agenda 2030 led by the World Health Organization.[2, 3]

Lack of access to and uptake of vaccines pose a major risk to immunization program effectiveness. [4] It is increasingly recognized that the development and implementation of solutions appropriate to local contexts are essential to ensuring access to and utilization of vaccination services and attaining high and equitable immunization coverage.[5]

Disruptions to routine immunization (RI) programs may stem from political upheavals, natural disasters, or health crises. In 2020, the Covid-19 pandemic interrupted child immunization programs in around 70 countries, drawing attention to the urgent need for strengthened resilience in health and immunization programs.[6] It continues to threaten immunization and other primary health care services.

Resilience in an immunization system requires planning for both the sustainability of the program and the ability to quickly recover from adversity, through isolating and managing threats to limit their effect on the program. [7] As such, achieving resiliency requires strong **problem-solving** and **management** skills.

A unique approach to helping countries strengthen immunization programs—called **RED-QI**—helps build resilience in immunization systems by implementing problem-solving tools and processes and training health managers and workers in management skills.

1 Report of the Sage Working Group on Vaccine Hesitancy. November 12, 2014. Sourced online in June 2021. https://www.who.int/immunization/sage/meetings/2014/october/SAGE_working_group_revised_report_vaccine_hesitancy.pdf?ua=1

2 Phase V (2021-2025). Sourced online in May 2021. https://www.gavi.org/our-alliance/strategy/phase-5-2021-2025

3 WHO Immunization Agenda 2030: A Global Strategy to Leave No One Behind. Sourced online in May 2021. https://www.who.int/teams/immunization-vaccines-and-biologicals/strategies/ia2030

4 Ibid.

5 Resilient Immunisation Systems: Looking Beyond High Vaccination Rates. The European Files. November 29, 2019. Sourced online in June 2021. https://www.europeanfiles.eu/health/resilient-immunisation-systems-looking-beyond-high-vaccination-rates

6 United Nations Department of Economic and Social Affairs, Sustainable Development. Overview of Sustainable Development Goal 3. Sourced online in June 2021. https://sdgs.un.org/goals/goal3

7 Resilient Immunisation Systems: Looking Beyond High Vaccination Rates. The European Files. November 29, 2019. Sourced online in June 2021. https://www.europeanfiles.eu/health/resilient-immunisation-systems-looking-beyond-high-vaccination-rates

WHAT IS RED-QI?

RED-QI was developed to support full implementation of an immunization strategy called **Reaching Every District (RED)**. WHO, UNICEF, and other partners developed RED in 2002 to strengthen management of RI services at the district level and below. Most African countries use the RED strategy, but some districts and facilities in different countries have had challenges in fully operationalizing it.

To address this, John Snow, Inc. (JSI), applied quality improvement (QI) concepts and tools to develop an innovative approach in 2010 to help immunization programs fully put the RED strategy into practice in a way that is sustainable and could be adapted to their local contexts through continuous learning. This approach is known as **Reaching Every District using Quality Improvement (RED-QI)**. It is important to note that RED-QI does not try to replace the RED strategy. Instead, it helps advance RED from a "what to do" strategy to a "how to" approach for strengthening the RI system.

JSI worked with the government of **Ethiopia from 2011-2021** and the government of **Uganda from 2013-2019** to introduce this enhanced approach, scaling up the projects to ultimately reach 103 districts in Ethiopia and 25 districts in Uganda.

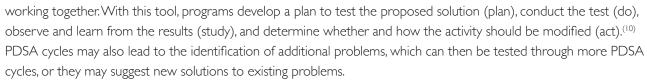# HOW RED-QI IMPROVED RESILIENCY IN ETHIOPIA AND UGANDA

Desk Review and Key informant Interviews Draw Out Key Findings on Problem Solving and Management Training

RED-QI incorporates **problem-solving tools and processes** such as root case analysis into immunization program management, particularly at subnational levels. **Root cause analysis** helps managers and frontline health workers generate possible causes of a problem at the local level, classify them, and identify the underlying (root) causes of the problem, rather than focus only on the problem's symptoms. Identifying the sources of the problem helps teams develop lasting solutions.[8]

Implementing one or more solutions to the identified problem is the follow-up step to the root cause analysis. Using this process regularly builds both skills in critical thinking and a mindset of being able to solve problems with locally available resources (with minimal external support), factors that build resilience.

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Another tool used in the RED-QI approach is the **Pareto chart**, which breaks down a problem into categories to identify the vital few that contribute the most to a problem. This bar chart allows managers and health workers to visually depict which situations are most significant and to prioritize problems. [9]

RED-QI also implements **plan-do-study-act (PDSA) cycles** to test solutions crafted by health workers and community members working together. With this tool, programs develop a plan to test the proposed solution (plan), conduct the test (do), observe and learn from the results (study), and determine whether and how the activity should be modified (act).[10] PDSA cycles may also lead to the identification of additional problems, which can then be tested through more PDSA cycles, or they may suggest new solutions to existing problems.

In addition to these effective problem-solving tools and processes, RED-QI in Uganda also provided **leadership, management, and accountability (LMA) training to health facility managers**. While health professionals are routinely trained in skills needed to provide high-quality clinical care, they rarely receive training in the day-to-day management skills required to lead and manage human resources and the provision of health services. In facilities in Uganda where managers lacked these LMA abilities, immunization microplans were poorly developed and budgeted, infrequently referred to or monitored, and incompletely implemented.

In 2020, JSI conducted a desk review of key project documents, data, and studies from RED-QI in Ethiopia and Uganda, as well as 28 key informant interviews (KIIs) with project officers, EPI managers, health facility managers, and immunization partners familiar with the approach and implementation and expansion in these countries. The purpose was to draw out the lessons learned and help inform how the approach can be tailored to strengthen RI in other countries. The findings demonstrate how RED-QI helped the two countries' immunization programs improve key aspects of resiliency.

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8 Fishbone Diagram. American Society for Quality (ASQ). Sourced online in June 2021. https://asq.org/quality-resources/fishbone

9 What is a Pareto Chart? American Society for Quality (ASQ). Source online in June 2021. https://asq.org/quality-resources/pareto#Use

10 How to Improve. Institute for Healthcare Improvement. Source online in June 2021. http://www.ihi.org/resources/Pages/HowtoImprove/default.aspx

Findings on Problem-solving Tools and Processes

KII respondents in both Uganda and Ethiopia noted the value of RED-QI in improving skills in local problem solving. Respondents noted that the approach increased technical capacity among immunization managers and health workers and provided useful tools for staff to analyze and solve local issues. In using these tools, health facility managers and health workers felt they did not have to wait for district managers to identify and solve problems, thus increasing health workers' self-reliance and autonomy. Also, the RED-QI approach to microplanning incorporated QI tools such as root cause analysis, problem prioritization, and problem solving. Respondents described how the approach improved both the planning and reach of services to all communities, through improvements in health workers' capacity to problem solve around challenges with service delivery.

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For example, a technical officer from an immunization partner in Ethiopia stated that **"having QI within the RED (strategy)—the PDSA cycle, root cause analysis—helps health workers identify local problems and come up with local solutions. [It] also helps open their eyes to other problems that may not necessarily be related to immunization. There are often underutilized resources in local communities, and using these problem-solving tools will help alleviate this."** In addition, the use of RED-QI processes and tools for other public health programs beyond immunization was noted by multiple KII respondents in both Ethiopia and Uganda, who said they had seen the QI problem-solving tools and processes used by health workers in nutrition, maternal and child health, and HIV prevention and treatment programs.

Another respondent described health workers' use of the root cause analysis tool, saying, **"They were able to dig deeper into analysis and problem solving, which they valued."** A study of the use of QI tools in Ethiopia noted that the root cause analysis tool was felt to be simple to use and popular. It was often the first step used to identify problems among participants, getting into the "why" behind issues, which then guided thinking on how to address them. Other tools cited as valuable were the Pareto charts that help prioritize problems and run charts to track immunization coverage.

Several KII respondents in Ethiopia and Uganda noted that certain tools, such as PDSA cycles, were complex to learn and their use had reduced or stopped in some places. At the same time, the problem-solving and community collaboration processes engendered by the RED-QI approach were sustained, which was one goal of the approach.

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Findings on leadership, management, and accountability (LMA) training

In Uganda, project staff developed a one-day LMA training course and trained 121 facility managers in eight districts. District health teams reinforced the skills from the course through further on-the-job mentorship and coaching during supportive supervision visits.

Health facility managers in Uganda highly valued LMA training, noting in KIIs that it strengthened their abilities as managers. The learning from this work suggested that facility managers who received LMA training were more empowered, involved, and committed than before they were trained. They were better able to utilize data, motivate their teams, budget responsibly, and engage non-health stakeholders to identify underserved populations and contribute to meeting their immunization needs. Through these linkages, more local resources were generated to close funding gaps in local immunization programs.

RED-QI helps to build resilience of immunization programs

The RED-QI approach has contributed to increasing the resilience of immunization programs in three main ways. It has helped subnational immunization managers and health workers improve critical thinking, problem-solving, and management skills. It has developed health workers' sense of autonomy in decision making and self-reliance. And it has strengthened collaboration between health authorities and community leaders for program planning, monitoring, and local resource generation. In these ways, immunization programs can more effectively function and respond to threats, whether they be health emergencies, natural disasters, or political strife. Building the capability of subnational and local health personnel to proactively manage inevitable crises helps ensure that lifesaving vaccines continue to reach all populations with limited interruption in order to reduce the toll of vaccine-preventable diseases.

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