Enhancing Quality Improvement for Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCAH): Insight at Remera Rukoma Hospital

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ABSTRACT

A comprehensive quality improvement (QI) training was conducted at Remera Rukoma District Hospital from March 11-15, 2024 targeting 21 key stakeholders, including hospital heads of departments and leaders from various high-risk service areas. Facilitated by national QI facilitators and a QI advisor in USAID Tubeho project, the program aimed to enhance healthcare quality by empowering professionals with knowledge and skills in QI methodologies. The training covered topics such as QI principles, patient safety, change management, and hospital accreditation, utilizing a participative approach with diverse teaching methods. The training resulted in significant improvements in participants' QI knowledge, with average test scores rising from 52.9% to 86.9%. Participants successfully identified quality gaps, developed aim statements, and designed QI projects for implementation. Hospital rounds revealed critical areas for improvement, particularly in maternity and neonatology departments. Key recommendations included fostering closer collaboration between USAID Tubeho staff and hospital personnel, reviewing and refining existing QI projects, and providing targeted support for new initiatives addressing identified gaps. This training represents a crucial step towards embedding a culture of continuous improvement in the healthcare system.

INTRODUCTION

Reproductive, maternal, newborn, child and adolescent health (RMNCAH) is an important measure of progress towards universal health coverage and a priority health area for African countries [1]. However, to accomplish this involvement, staff need to be knowledgeable and skilled to do so. Part of the knowledge and skills that health facilities staff need to acquire include continuous quality improvement techniques. Applying those knowledge and skills will help them better understand the process through which healthcare quality gaps are identified, analyzed to know their root causes, development and testing of changes to address root causes; implementing and sustaining successful changes [2].

The Quality Improvement Training for Hospital staff is vital to enhance the overall quality of healthcare services provided at the hospital. The training empowers healthcare professionals with the knowledge and skills required to identify, assess, and improve the quality of patient care. Traning hospital leadership helps improve standards of care at different levels of health system, regular evaluation of the quality of care and adherence to the set norms and standards and institutionalization of continuous quality improvement system for

all healthcare providers [3]. In this regard, the Ministry of health in collaboration with USAID Tubeho Project conducted a 4 day's training on quality Improvement for Remera Rukoma District Hospital heads of departments and other key leaders. Training topics included introduction to quality improvement, patient safety, quality improvement (QI) models, how to conduct rapid assessments on the quality of healthcare, concepts of change management, developing and implementing QI plans, monitoring and evaluating QI as well as the implementation of the hospital accreditation program, etc. The involvement of hospital heads of department and key leaders (clinical and non-clinical) is essential in the successful implementation of the quality improvement projects and other strategies aimed at improving RMNCAH indicators [4].

Training Goal: The purpose of the training was to build the capacity of the Hospital heads of department on QI principles, QI methodology, QI projects development, and data use for decision making to make a timely decision for improvement.

TRAINING METHODOLOGY

The training employed a comprehensive and engaging methodology designed to maximize participant learning and practical application. At its core was a participative approach, where facilitators actively incorporated participants' training needs, questions, reflections, and proposed strategies for change into the curriculum. This adaptive strategy ensured that the content remained relevant and immediately applicable to the participants' work contexts [5]. Each session concluded with a brainstorming activity, serving as both a summary and a platform for collaborative idea generation [6]. To foster deeper engagement and peer learning, participants were frequently organized into groups for various activities. The training utilized a diverse range of teaching methods to address different learning styles and reinforce key concepts [7]. These included facilitator-led presentations to introduce new concepts, brainstorming sessions to encourage creative problem-solving, and both small and large group activities and discussions to promote collaboration and knowledge sharing. Additionally, case studies and exercises were employed to provide practical, real-world applications of the concepts learned, while ward rounds offered hands-on experience in identifying and addressing quality improvement opportunities in a healthcare setting [8]. This multi-faceted approach ensured a dynamic, interactive learning environment that effectively met the training objectives while preparing participants to implement quality improvement strategies in their respective roles [9].

Targeted Audience: The quality improvement training at Remera Rukoma Hospital, scheduled for March 11-15, 2024, targeted a diverse group of 21 key participants, including hospital heads of departments and leaders. This comprehensive audience comprised hospital leaders, risk areas focal persons, quality and safety committees' chairpersons, and representatives from high-risk service areas such as maternal and neonatal care, HIV services, and Malaria and Tuberculosis programs. The training was expertly facilitated by a team of three experienced professionals: two National Quality Improvement Facilitators from Byumba Level II teaching hospital and RSSB Nyanza, alongside a Q.I Advisor from the USAID Tubeho Project.

This carefully curated mix of participants and facilitators ensured a comprehensive and tailored approach to quality improvement, addressing the specific needs and challenges of Remera Rukoma Hospital while leveraging both national expertise and international development support.

Training Evaluation/Assessment: The training employed pre-test and post-test approach to assess participant's knowledge prior to the training and the level of knowledge after training. Moreover, there were questions and answers session after each training session. The average score in the pre-test was 52.9% and whereas in the average percentage in post-test was 86.9%, as shown in table one. Daily anonymous evaluation forms were distributed to the participants at the end of daily session to provide their observations/comments/feedback about the taught subjects which the facilitators reviewed and responded accordingly [10].

TRAINING OUTCOMES

Following the completion of the quality improvement training, participants demonstrated remarkable progress in achieving the expected

Table 1: *Pre and post test scores*

Participants	Pretest	Post test
1	12 (60%)	18 (90%)
2	14 (70%)	18 (90%)
3	14 (70%)	18 (90%)
4	12 (60%)	18 (90%)
5	13 (65%)	14 (70%)
6	14 (70%)	18 (90%)
7	7 (35%)	18 (90%)
8	12 (60%)	18 (90%)
9	12 (60%)	18 (90%)
10	9 (45%)	17 (85%)
11	7 (35%)	18 (90%)
12	12 (60%)	16 (80%)
13	9 (45%)	18 (90%)
14	12 (60%)	16 (80%)
15	9 (45%)	17 (85%)
16	13 (65%)	18 (90%)
17	13 (65%)	16 (80%)
18	9 (45%)	18 (90%)
19	12 (60%)	18 (90%)
20	12 (60%)	18 (90%)
21	7 (35%)	17 (85%)

outcomes. They successfully identified several quality and performance gaps within their organization and crafted clear, actionable aim statements to address these issues. Participants showed enhanced analytical skills by thoroughly examining the root causes of these gaps using various tools and techniques learned during the training. They also exhibited creativity and initiative in developing innovative change ideas, which they systematically tested using Plan-Do-Study-Act (PDSA) cycles [11]. Furthermore, participants implemented effective measurement strategies to monitor their improvement efforts, utilizing appropriate metrics and data visualization techniques to track progress. This comprehensive application of learned skills not only validated the effectiveness of the training but also led to tangible improvements in various processes within the organization, showcasing the participants' newfound expertise in quality improvement methodologies [12].

Post Training Plan: During the training, hospital heads of department and trained key leaders met to identify priority areas for improvements in line with RMNCAH accreditation standards and the hospital quality and patient safety plan. Identified gaps were used during practical sessions to design QI projects that will be implemented in the departments. During QI projects implementation, teams will be primarily and regularly mentored and coached by the QI officer with regular support from USAID Tubeho teams. There will also be continuous evaluation of the QI projects to track

their progress by the Hospitals QI committees.

Observed gaps: During comprehensive rounds conducted in the maternity and neonatology departments, several critical gaps in patient care and safety were identified, highlighting areas requiring immediate attention and improvement. Foremost among these was an ineffective triage and follow-up system for high-risk pregnancies, potentially compromising the timely identification and management of complications. This gap poses significant risks to both maternal and fetal health outcomes. Additionally, the emergency preparedness was found to be suboptimal, with emergency trolleys in the maternity ward not properly maintained or stocked, and ambulances lacking proper cleanliness protocols, both of which could severely impede rapid response in critical situations [13]. Of particular concern was the insufficient implementation of infection prevention and control (IPC) measures across various hospital departments, starkly evidenced by an ongoing Klebsiella outbreak in the neonatology unit. This outbreak not only threatens the health of vulnerable newborns but also indicates broader systemic issues in hygiene and infection control practices [14]. Lastly, a significant gap was noted in the continuity of care for high-risk infant's post-discharge, with no structured follow-up mechanism in place. This lack of follow-up could lead to missed opportunities for early intervention in potential complications, potentially affecting long-term outcomes for these vulnerable patients [15]. These identified gaps collectively point to a pressing need for comprehensive quality improvement initiatives focusing on risk management, emergency preparedness, infection control, and continuity of care in both the maternity and neonatology departments. Nearly 20 years ago, Grol and Grimshaw asserted that evidence-based practice must be complemented by evidence-based implementation [2,16].

RECOMMENDATIONS

At the conclusion of each quality improvement (QI) training session, participants engaged in a reflective process to formulate key recommendations, demonstrating their commitment to applying newly acquired knowledge and skills in their respective healthcare settings. The first recommendation emphasized the importance of collaborative efforts, calling for USAID Tubeho staff to establish closer working relationships with hospital personnel, professional association mentors, and district-based mentors [17]. This collaborative approach aims to provide comprehensive support to healthcare facilities in designing, implementing, monitoring, and evaluating QI projects more effectively, ensuring that interventions are tailored to local needs and contexts. The second recommendation focused on enhancing the quality and consistency of existing QI initiatives by proposing a thorough review of ongoing projects. This review process would involve refining the documentation practices to align more closely with the QI methodologies learned during the training, thereby improving the rigor and reproducibility of these projects. Lastly, participants recommended that hospitals receive dedicated support in initiating and monitoring new QI projects specifically targeted at addressing the gaps identified during the training. This proactive approach underscores the importance of translating theoretical knowledge into practical applications, encouraging healthcare facilities to tackle their most pressing quality issues systematically [18]. Collectively, these recommendations reflect a holistic strategy for embedding QI principles and practices more deeply within the healthcare system, fostering a culture of continuous improvement and evidence-based decision-making.

CONCLUSION

This Quality Improvement Training improved healthcare quality and patient safety. The training empowered 21 key stakeholders, including hospital heads and leaders, with essential knowledge and skills in quality improvement methodologies. The comprehensive curriculum and participative teaching approach resulted in a significant increase in participants' understanding of QI principles, with test scores improving from 52.90% to 86.9%. Participants also demonstrated practical application by identifying critical gaps in patient care, particularly in maternity and neonatology departments, and developing actionable QI projects. The post-training plan, focusing on implementing QI projects and ongoing mentorship from USAID Tubeho teams, promises to drive sustainable improvements in healthcare delivery at Remera Rukoma Hospital, contributing to better health outcomes and progress towards universal health coverage in Rwanda.

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