

# Nutrition Quality Improvement Experiences from Kawempe National Referral Hospital, Kampala, Uganda, July 2021

## The USAID Maternal Child Health and Nutrition (USAID MCHN) Activity

*The USAID MCHN Activity is a five-year program (January 2020 to December 2024) funded by USAID/Uganda to improve maternal, newborn, child health and nutrition (MCHN) outcomes in Uganda. This is achieved through provision of targeted technical support at national and subnational levels to (1) develop and rollout MCHN strategies, and high-impact practices and interventions; (2) strengthen coordination and cooperation within and between Government of Uganda (GoU) sectors; and (3) increase the use of data for planning, decision making and learning. The Activity also supports improved delivery of MCH and Nutrition services in Kampala particularly for the urban poor, through strengthened service delivery systems in the public and private sectors. The MCHN Activity closely collaborates with government of Uganda (GoU) structures at all levels, private sector entities, other USAID-supported Activities, and development partners to both support and leverage their efforts to improve MCHN outcomes in Uganda.*

*The MCHN Activity is implemented by a consortium led by FHI 360 that includes EnCompass LLC, Makerere University School for Public Health, Save the Children, and the Uganda Healthcare Federation.*

## Background

Nutritional status assessment of children and pregnant women at health facilities are suboptimal in Uganda. Kawempe National Referral Hospital (KNRH) District Health Information System 2 (DHIS2) records from July to October 2020 revealed low rates of nutrition assessments. Nutritional status assessments using the Mid-Upper Arm Circumference (MUAC) tape were low across KNRH units: only 1% at the Acute Care Unit (ACU), 11% at the Young Child Clinic (YCC), and 49% in the antenatal clinic (ANC). Therefore, it was necessary to further understand nutritional assessment implementation at KNRH and develop contextually relevant solutions to improve nutrition assessment activities within the hospital units.

The USAID MCHN Activity, together with the Ministry of Health (MoH) senior management team, recommended a Quality Improvement (QI) approach to catalyze and strengthen the capacity of KNRH to provide quality maternal, child health and nutrition services. The MCHN activity utilized QI to support hospital management and front-line health workers to identify gaps, develop, test and institutionalize changes (using the plan, do, study, and act cycles) and increase the proportion of children being assessed using MUAC.

## Objectives of the Learning Brief

This Learning Brief shares preliminary experiences, best practices and lessons learned so far from the implementation of nutrition QI projects at KNRH's Antenatal Care (ANC) Clinic, Acute Care Unit (ACU) and Young Child Clinic (YCC). The purpose of documenting these experiences is to inform scale-up of QI to address sub-optimal nutrition services in other high-volume health facilities within Kampala capital city, and across the country.

## Overview of the Quality Improvement Process

*Baseline assessment:* The MCHN Activity QI coach, QI advisor, and hospital nutritionists carried out a baseline assessment of gaps in the nutrition assessment for infants, children, and pregnant women across three hospital units: The ANC clinic, the YCC and the ACU. These units represent the highest flow of clients meeting assessment criteria.

*QI structures:* The MCHN QI coach supported KNRH to form Work Improvement Teams (WIT) within the three units with clear weekly roles and tasks. The QI coach encouraged the unit-

level WITs to hold weekly meetings to brainstorm on change ideas, identify and prioritize solutions to implementation bottlenecks, and regularly review data to assess progress in performance. Participants in the weekly meetings included the nutritionists, medical officers, unit in-charges, nurses, records assistants, occupation therapy staff and other available clinicians.

*Mentorship and coaching:* The senior nutritionist, QI coach and unit in-charges carried out weekly on-job mentorships and coaching, and coordinated the QI activities. The nutritionists provided supportive supervision to nurses and records officers on nutrition assessments and documentation in HMIS tools at the three units for one month. The QI coach conducted six Continuous Medical Education (CMEs) sessions, which were later integrated into weekly meetings. The senior nutritionist availed Information, Education, and Communication (IEC) materials and guidelines on nutrition assessments and management at the three units.

### Quality Improvement Process

**Step 1.** Identify the problem through the baseline assessments at the units of ACU, ANC and YCC.

**Step 2.** Functionalize WITs at ACU, ANC and YCC, and brainstorm on the solutions and changes to improve nutritional assessments.

**Step 3.** Test changes with weekly data collection and WIT meetings supported by the MCHN QI coach and Nutritionist.

**Step 4.** Provide support supervision and monitor teams by the nutritionist and Hospital QI team.

**Step 5.** Provide continuous mentorships and coaching, including provision of anthropometrics materials.

## Quality Improvement Implementation

### Antenatal Care

*Problem analysis:* Using convenience sampling, the ANC WIT reviewed records from 450 pregnant mothers' within the ANC register for October and November 2020. The team identified gaps in nutrition assessment, and analyzed root causes using the **root cause-effect approach**. The problem analysis found that only half of pregnant mothers received nutrition assessments during their ANC visits. An analysis of root causes indicated low assessments due to a lack of anthropometric tools and registers with space to document MUAC, and limited health worker capacity due to persistent high patient workload and burnout.

**Root Cause-Effect Approach:** A systematic process for identifying "root causes" of problems or events and an approach for responding to them. Cause-and-effect diagrams are drawn to illustrate the possible causes of a particular problem. Causes are then sorted into related groups.

(Mark Doggett, 2014)

*Improvement objectives:* To improve the percentage of pregnant mothers assessed at ANC triage using the MUAC tape from a baseline of 52% in November 2020 to 90% in January 2021 and maintenance of at least 90% through August 2021.

*Change ideas implemented:* The QI coach and hospital nutritionists supported the WIT to develop, test and implement solutions using Plan-Do-Study-Act cycles. Some of the solutions introduced directly addressed the root causes of low performance, including:

- ✓ Provision of anthropometric equipment
- ✓ Introduction of an integrated ANC register to enable documentation of MUAC results, and
- ✓ Using data to guide decision making.

Other change ideas included the following:

- ✓ Including MUAC assessment along with other systematic assessments on booking days,
- ✓ Taking MUAC immediately after taking the blood pressure measurement,
- ✓ Placing MUAC tapes on tables in every assessment room, and
- ✓ Conducting WIT-led performance reviews and identifying follow-up actions every Friday.

*Results following QI activities:* Results demonstrate a substantial initial increase in nutrition assessment using the MUAC tape (“MUAC assessment”) among pregnant women – increasing from 415/798 (52%) in November 2020 to 2411/2486 (97%) in January 2021 (Figure 1). However, we observed a modest decline in women receiving MUAC assessment in April 2021 (2273/2644 (86%)) and June 2021 (1742/2170 (80%)) (Figure 1). This decline corresponds to a pause in weekly WIT meetings in late April 2021, which may account for declining performance.

The pause in weekly WIT meetings and declining rate of nutrition assessment could be a result of reduced supportive supervision by the hospital QI teams and MCHN QI coaches due to COVID-19 restrictions, heightened fear of COVID-19 among health workers and community members leading to a reduction in services that require close contact with clients, and COVID-19 related travel restrictions limiting both health workers and mothers’ access to KNRH during the lockdown.

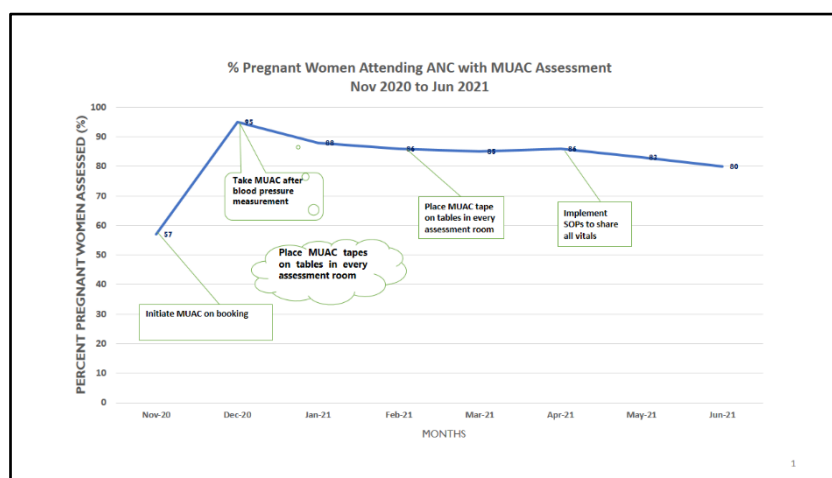


Figure 1: Percentage of pregnant women with MUAC assessment at KNRH

Figure 1 indicates that initiating MUAC on booking was a highly successful change intervention leading to an increase in MUAC measurement from 57% to 95%. Other change ideas, such as taking MUAC after blood pressure measurement, placing the MUAC tape on tables in every assessment room, and implementing SOPs to share all vitals, appear to have yielded less leverage, although the high rates attained through our initial intervention may have impacted these results. In response to the moderate decline in performance after December 2020, a review meeting was held with the ANC WIT to formulate new test ideas in late June 2021. The new change ideas included: placement of a nutritionist twice a week at ANC to support MUAC assessment, and weekly supportive supervision and mentorship by the senior nutritionist and QI coach to reactivate MUAC assessment at triage area of ANC.

### **Acute Care Unit**

*Problem analysis:* The nutritionists and QI coaches observed care processes and reviewed HMIS registers and patients' records at the ACU in October 2020. The team did not find measures in place to ensure all children received nutritional assessments during the visits, and found that only 34% of children in the ACU were documented to have been assessed using MUAC.

The **Why-Why approach** was used to understand why clients were not assessed for nutritional status using MUAC tapes during visits to the ACU. This approach ensured an exhaustive identification of causes which were grouped as logistics, human resources, data reviews and utilization. Human resource challenges included laxity, poor attitude, and poor teamwork among health workers. This may be attributed, in part, to over-worked staff who face a high patient workload. Logistic challenges included lack of MUAC tapes, weighing scales and height boards.

Data challenges included lack of performance reviews by in-charges, poor documentation of completed MUAC measurements, and lack of tally sheets and innovation among staff to improvise existing tools for nutrition assessment documentation.

*Improvement objectives:* To improve the percentage of children aged 6-59 months assessed at the ACU using MUAC from a baseline of 34% in November 2020 to 80% in June 2020.

#### *Change ideas implemented:*

- ✓ Placement of MUAC tapes and height/length boards at the ACU triage desk
- ✓ Having medical officers reject patient forms for review without a nutrition status assessment record
- ✓ Having nutritionists who were part of the triage team join ACU ward rounds
- ✓ Conducting nutrition assessments on all days, including weekends
- ✓ Requiring health workers at ACU to report early and start work on time to maximize clinic hours to serve patients
- ✓ Orienting occupational therapy staff to assess MUAC, weight and height for the occupational therapy clients
- ✓ Orienting records assistants on how to compile weekly summaries of the data on nutrition assessments at the ACU
- ✓ Conducting WIT-led performance reviews every Wednesday

#### **Why-Why Approach:**

A process of drilling down to the root causes of a problem by asking "Why?" five times.

Next, the team identifies a counter measure, and follows through its implementation to prevent the problem from recurring

(Serrat, 2017)

*Results following QI activities:* MUAC assessments increased from 34% in November 2020 to 75% in February 2021 following the implementation of change ideas to place the MUAC tape and height and weight board at the triage desk and hold WIT meetings every Wednesday with mentorship support by the nutritionists. MUAC assessments declined to 54% in March 2021 despite the continuation of the original change package and the implementation of a new change idea requiring doctors to reject forms without nutritional assessments indicated (Figure 2). The WIT discovered that orienting only doctors was not effective because doctors make up a very small proportion of staff reviewing the forms. In response, the team started orienting interns (junior doctors) who make up the bulk of staff reviewing forms in March 2021. This appears to have mitigated a further reduction in nutrition assessments. Nutrition assessments deteriorated from 53% in April 2021 to 36% in May 2021 due largely to constraints caused by the second wave of COVID-19, such as reduced staffing due sickness and a decline in supportive supervision. Nutrition assessments increased to 49% in June 2021 as a result of an increase in supportive supervision and the deployment of a nutrition-specific QI officer at KNRH.

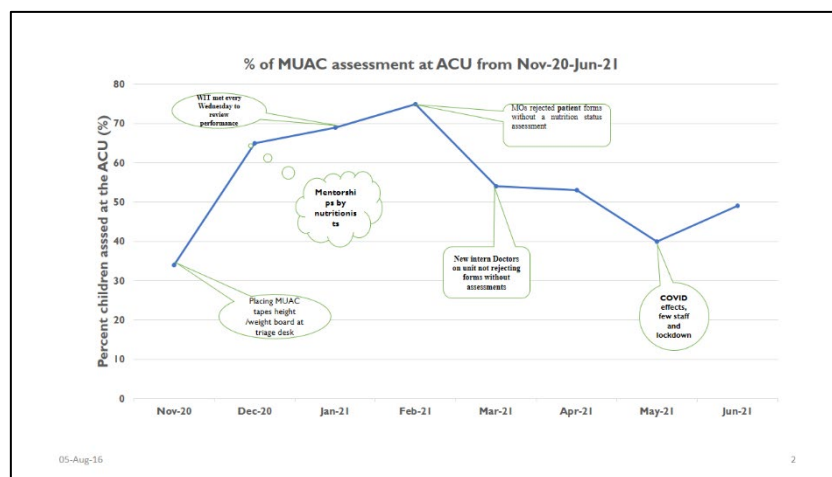


Figure 2: Percentage of children 6-59 months who had a MUAC assessment at Acute Care Unit

Following the deterioration in performance, the WIT met to discuss the causes and way forward to reverse the trend. Table 1 highlights the gaps identified, the possible causes, and agreed upon modifications/change ideas.

Table 1: Key identified gaps, causes, and change ideas

Gap	Cause	Change idea
Inconsistent nutrition assessment by some staff especially on weekends and days when the nutritionist moves out to support other units	Poor attitude and laxity of staff	Placed SOPs on all working tables to disseminate information and remind those who forget.
	New intern doctors are not aware of the idea of rejecting all patient forms without nutrition assessment	Distributed additional MUAC tapes to ensure coverage of all workstations
	Late arrival and reduced number of staff on duty due to transport challenges during lockdown	Provided MUAC cutoff points at each working table to remind staff how interpret the results

Gap	Cause	Change idea
	Standstill of weekly WIT meetings due to Covid-19	Resumed WIT meetings every two weeks to enable quick performance reviews  Provided stamp on patient file, chart, or exercise book to remind staff on the required nutrition assessment parameters (Image 1).
Doctors (Interns) no longer rejecting patient forms without MUAC assessment	Routine monthly rotation of intern doctors	Produced and distributed SOPs to inform every staff that comes in about the nutrition assessment protocols
Less attention is given to nutrition assessment records in the patients' books for documentation in the HMIS register	Laxity of responsible staff  Late arrival of responsible staff, The staff who stand in the gap ignore nutrition data with the aim of clearing lines	Fixed reminders to every page of the register at the nutrition assessment area to remind staff to document nutrition assessment records.

The ACU WIT team decided to revise the improvement objective to: To improve nutrition assessment using MUAC for children aged 6-59 months attending ACU at KNRH from 40% in May 2021 to 90% by September 2021.

### Young Child Clinic

**Problem analysis:** The nutritionists, MCHN QI coach and QI Focal person YCC observed care processes, reviewed patients' records, and carried out a root cause analysis in October 2020 to understand the gaps to nutrition assessment at the YCC. Findings indicate a lack of MUAC tapes, length boards and WHO Z-score charts; thereby, inhibiting health workers from assessing and interpreting weight for length Z-Scores. Although health workers plotted weights on the child health cards, they did not document the weight for age Z-scores in the child health register. A lack of tally sheets to aid in tallying also impeded MUAC measurement documentation. Lastly, MUAC was only assessed and documented at measles vaccination clinics.

**Improvement objectives:** To improve the percentage of children 6-59 months assessed for MUAC at the YCC triage point from a baseline of 0% in November 2020, to 60% in January 2021, and 90% by June 2021.

#### Change ideas implemented:

- ✓ Provision of MUAC tapes
- ✓ Provision of refresher training/mentorship on MUAC tape use
- ✓ Development of simplified nutrition tally sheets to ease weekly tallying and monthly reporting
- ✓ Holding weekly follow up calls between the facility nutritionist and QI coach.



Image 1: A nurse demonstrates the use of MUAC tapes at YCC.



- ✓ Providing supportive supervision and on-the-job coaching to improve health worker skills and attitude towards nutrition assessment (Image 1)
- ✓ Integrating nutrition assessments with immunization
- ✓ Conducting WIT-led performance reviews every Tuesday

*Results following QI activities:* The results demonstrate an initial rapid increase in MUAC assessment of children at the YCC from 0% in October 2020 to 95% in December 2020 following onsite mentorship on use of MUAC tape and improvising nutrition tally sheets to enable documentation. MUAC assessment at the YCC declined to 63% in January 2021 despite integrating nutrition assessments with immunization. The decline is likely attributable to the festive season where there were fewer staff available and shorter working days. Performance improved gradually from 70% in February 2021 to 92% in June 2021 (Figure 3). In March 2021, KNRH's WIT meetings were not supported by QI officers. However, nutritional assessments have steadily increased with the support of QI officers mentoring the staff in WIT meetings. The WIT has revised the improvement objective to: improve the percentage of children 6-59 months assessed for MUAC at the YCC triage point from 92% in June 2021 to 100% in September 2021.

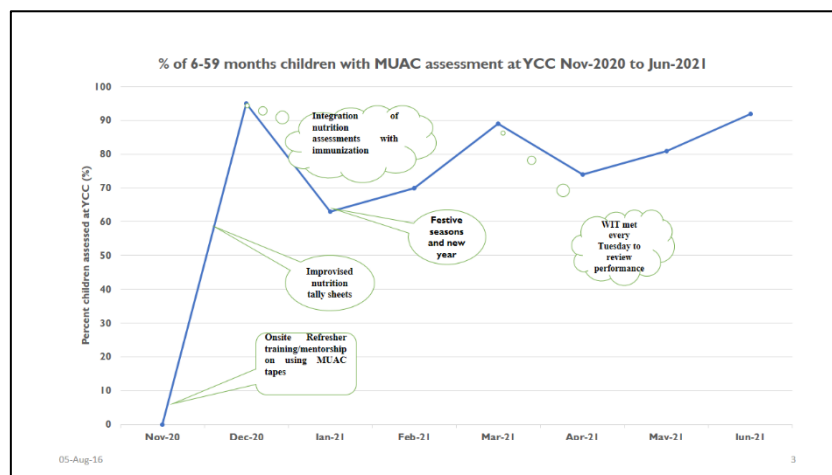


Figure 3: Percentage of children, 6-59 months who had MUAC assessment at YCC

## Summary of Lessons Learned from QI Experiences To Date

1. Availability and engagement of the USAID MCHN Activity QI coaches in nutrition assessments contributed to improved performance of the health workers at ANC, ACU, and YCC units;
2. Leadership provided by in-charges was important for successful nutrition QI implementation at ANC, ACU, YCC and records units; and
3. Continued periodic supportive supervision by nutrition technical personnel and QI coaches was critical in sustaining nutrition assessments in the YCC. The scaling down of supportive supervision and on-job coaching in ANC and ACU led to laxity and gradual drop in performance.

## Recommendations for Sustainability and Scale Up

Overall, an enabling environment for nutrition assessments and interventions are required to sustain and scale-up nutrition support at KNRH.

1. Provide adequate supplies of basic assessment tools for anthropometry, including MUAC tapes for infants, children, and adults, weighing scales for children and adults, charts for Z-scores and height/length boards, among others, for easy and timely assessments at all units.
2. Continue close supportive supervision and on-the-job coaching by senior technical/trained staff to keep nutrition service delivery active at the various units.
3. Identify and mentor "champions" in each unit who can help unit staff to sustain implementation of change ideas over time and transition them into institutionalized practices.

## References:

Doggett M (2006) "Root Cause Analysis: A Framework for Tool Selection." *Quality Management Journal* 12(4): 34-45.

Serrat O (2017) "The Five Whys Technique." In: *Knowledge Solutions*. Springer, Singapore.

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