



Photos by MSH Uganda

Before and after photos from Baduda Hospital: Quality Improvement Teams worked with facilities to organize working areas and reduce the time needed to locate files and commodities.

## Best Practices

A number of best practices were identified during the QI process:

- **Training and retraining of providers on the use of data:** Appreciation of the important role that data plays in quality improvement is critical for QI processes to succeed. Unfortunately, in many settings, data compilation and reporting is left to a few records assistants and health providers. Training and retraining on the use and importance of data in the QI process should be emphasized.
- **Comprehensive training of QI team members on the QI methodology:** Comprehensive training on the QI methodology is necessary for providers to understand the QI process. Providers must not only understand the iterative nature of QI, but also learn to identify feasible solutions for identified challenges.
- **Learning and exchanging information:** Learning and sharing successes and experiences both within and across facilities increases the speed and effectiveness of QI interventions. Health providers are encouraged to learn that other facilities have not only faced the challenges they face, but have been able to successfully address those challenges.
- **Importance of consistent mentoring and support supervision:** Ongoing supportive mentoring between the learning sessions ensures that facilities stay on track and receive the support they need.

## Continuing Challenges

- **Staff turn over:** High staff turnover has hindered effective implementation of QI activities in many facilities. Turnover removes personnel trained in QI methodologies, necessitating retraining.
- **Low staffing:** In some facilities, failure to replace staff or delays in replacing staff increased existing staff caseload. In some cases, staff personnel were not able to conduct all proposed activities due to lack of time.
- **Lack of equipment, stock outs, and other infrastructural challenges:** Several facilities lacked the equipment needed to realize their QI goals and objectives. Stock outs of test kits and other commodities hindered full implementation of some QI interventions.

## Conclusion

QI interventions have the potential to substantially improve the quality of HIV care and treatment services if they are implemented fully. There is a need for ongoing support to facilities if these interventions are to succeed. The STAR-E project has shown improvements on key HIV care indicators in facilities implementing QI projects in Eastern Uganda. However, more work must be done to build the capacity of policy makers, service providers, and project staff to embrace and appreciate the methodology. Moving forward, MOH has recommended a one day dissemination meeting to orient stakeholders to the new QI framework in each supported district.



## USING SYSTEMATIC QUALITY IMPROVEMENT PROCESSES TO IMPROVE HIV CARE AND TREATMENT IN EASTERN UGANDA

Photo by MSH Uganda

## Background

The World Health Organization's (WHO) 2007 framework for strengthening health systems in developing countries identified quality as one of the key drivers of improved health outcomes and greater efficiency in health service delivery.<sup>1</sup> Using a systematic quality improvement (QI) approach is recommended for improving health care in these settings. QI has been defined as a process in which the implementation of small-scale changes to address weaknesses within a health system are tested and, if found effective, brought to scale.<sup>2</sup> These methods include systematic examination of processes used in service delivery, operations research, teamwork, the optimal use of measurement and statistics in daily work, benchmarking, and participative management techniques. The literature has shown that QI methodologies are effective in improving health care

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1. World Health Organization. Everybody's Business: Strengthening Health Systems to Improve Health Outcomes. <http://www.wpro.who.int/sites/hsd/documents/Everybody's+Business.htm>

2. Lynn J, Baily MA, Bottrell M, et al (2007). The ethics of using quality improvement methods in health care. *Annals of Internal Medicine* 2007; 146(9):666-673.

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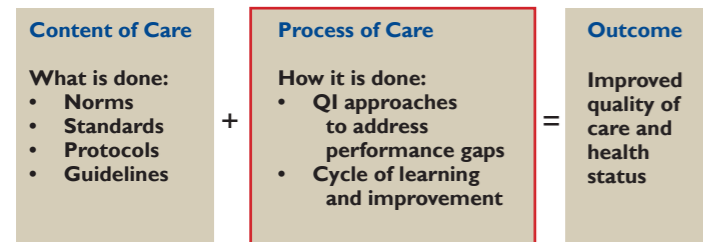
delivery and outcomes in resource limited settings,<sup>3,4,5</sup> and there is growing research on the role that QI processes can play in improving HIV care and treatment specifically.<sup>6</sup>

## The STAR-E Approach

To improve quality of HIV care in targeted districts, STAR-E scaled up the MOH quality improvement framework in March 2013. STAR-E targeted 66 facilities, including high volume and smaller facilities that were underperforming on key indicators. Using a phased approach, ten facilities were identified to conduct QI in March 2013, another 33 facilities began QI interventions in July 2014, and the remaining 23 facilities initiated QI in November 2015. Due to staff turn-over, many of the 10 facilities initiating QI interventions in March 2013 did not consistently conduct QI activities. This summary therefore tracks the impact of QI interventions beginning in July 2014, and considers the period before July 2014 as the baseline.

The MOH framework for improving quality care is based on the framework for improving clinical quality adapted from P.B. Batalden and P.K. Stoltz.<sup>7</sup> This framework looks at two major components: what is done (content of care) and how it is done (process of care). Either component could lead to improvement, but the most powerful impact occurs by addressing both components simultaneously. The framework requires the development of evidence-based norms, standards, protocols, and guidelines, which are used to identify gaps and measure performance improvement.<sup>8</sup>

**Figure 1. A framework for the continual improvement of healthcare: building and applying professional and improvement knowledge to test changes in daily work<sup>9</sup>**



- Bradley J. & Igras S. (2005). Improving the quality of child health services: participatory action by providers. *International Journal for Quality in Health Care*; 17(5): pp. 391–399.
- Chakraborty S., D'Souza SA., Northrup RS. (2000). Improving private practitioner care of sick children: testing new approaches in rural Bihar. *Health Policy Planning*; 15(4):400–407.
- Omaswa F., Burnham G., Baingana G. et al. (1997). Introducing quality management into primary health care services in Uganda. *Bulletin of the World Health Organization*, 75 (2): 155–161.
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- P.B. Batalden, P.K. Stoltz, A framework for the continual improvement of health care: building and applying professional and improvement knowledge to test changes in daily work, *Jt Comm J Qual Improv*. 1993 Oct; 19(10): 424–452.
- Uganda, Ministry of Health, 2016. Health Sector Quality Improvement Framework and Strategic Plan: 2015/16–2019/2020
- P.B. Batalden, P.K. Stoltz, A framework for the continual improvement of health care: building and applying professional and improvement knowledge to test changes in daily work, *Jt Comm J Qual Improv*. 1993 Oct; 19(10): 424–452.

The process begins with using data to identify problems and develop improvement objectives. Using root cause analysis, an evidence-based intervention package is then selected and implemented. If testing shows that the intervention is not yielding results, another intervention is selected and tested. The process is repeated over several cycles until the expected change is maintained. Another area of focus is then selected to continue improvement efforts. Throughout this cycle, learning sessions and data synthesis meetings are organized to share lessons and further analyze change.

STAR-E worked with each targeted facility to develop a quality improvement team. At least two members of each team were sent to a five day training, and members attending the training were required to train the other members of the QI team. The teams were supported by a district quality improvement focal person who was a member of the district health team. The QI team was then required to follow the QI steps, using data to identify and prioritize bottlenecks and lagging indicators. STAR-E worked with QI teams at each facility to identify and agree on solutions to each challenge.

Health providers were required to compile and analyze routinely collected facility data on key indicators, including those related to HIV care and treatment. In addition to HIV, other areas for QI implementation included immunization, monitoring of labor using partograph, TB management, voluntary medical male circumcision, supply chain management, and laboratory services improvement. A staff person was assigned to oversee improvement in an area or indicator, collect and analyze data on that indicator/area, and report back to the QI team on improvements on a monthly basis. Each staff member assigned an indicator was required to keep a journal tracking improvements and actions on the specific indicator. Data was analyzed and presented on a monthly basis using charts to reflect changes over time. Data from a QI dashboard indicated performance in meeting national targets, and facilities were required to revise action plans for indicators not meeting MOH standards.

During this process, STAR-E provided ongoing mentorship to help facilities analyze data and track improvements on indicators targeted in the QI process. The quality improvement specialist and other mentors worked with the team to revise action plans and address challenges that were hindering improvement. To encourage learning across the system, QI members were required to attend regional learning sessions that brought together members from other facilities in the region. Facility QI teams presented their QI efforts, and discussed how challenges had been resolved.

## Results

The results presented here are from routinely collected data—primarily data reported to DHIS 2, the MOH health management information system—that have been analyzed to examine changes in selected HIV care indicators before and after QI interventions implemented in the 66 targeted facilities.

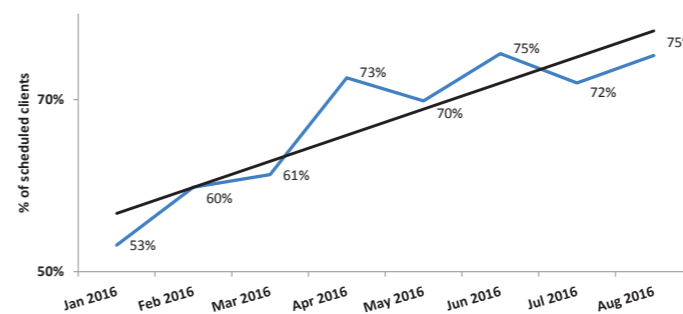
**Table 1. Selected facility results**

HIV Care Indicator	Before QI interventions	After QI interventions
<b>Busiu Health Center IV</b>		
No. of women in antenatal, labor, and postnatal care who are newly tested for HIV and receive their results	223	475
No. of persons tested for HIV in outpatient departments (OPD)	1,467	2,305
Retention of clients on antiretroviral therapy (ART)	64%	80%
Percent of persons living with HIV (PLHIV) screened for TB	N/A	100%
<b>Namawanga Health Center III</b>		
No. of persons tested for HIV in outpatient departments (OPD)	172	938
Percent ART adherence	N/A	100%
No. of women in antenatal, labor, and postnatal care who are newly tested for HIV and receive their results	78	114

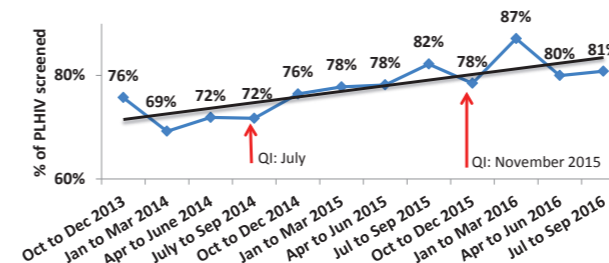
### Appointment Keeping

Ten of the 66 facilities identified appointment keeping as a problem and developed solutions to address this challenge. The data showed that among these facilities, the proportion of clients keeping their appointments increased from 53% in January 2016 to 75% in July 2016 (Figure 2).

**Figure 2. Percent of clients keeping scheduled appointments**



**Figure 4. Percent of HIV-positive clients screened for TB at last visit**



### HIV testing in outpatient departments

Many of the facilities noted that HIV testing in their outpatient departments was low and developed QI interventions to address this challenge. The data showed that among the 66 facilities implementing QI, the number of clients tested in OPD increased from 51,844 in October-December 2013 to 70,837 in July-September 2016 (Figure 3).

### TB screening and treatment

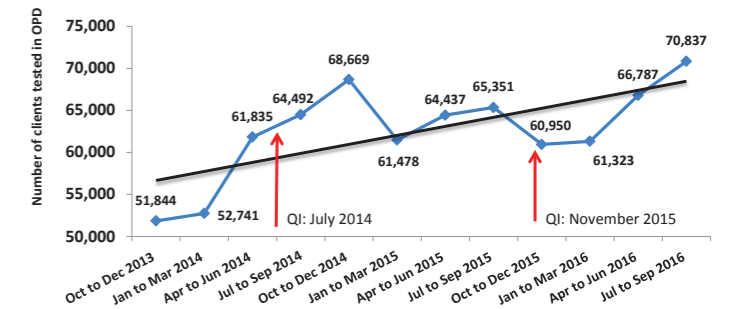
Screening for TB at the last clinical visit improved during implementation of QI interventions. Screening rose from 72% in the period before July 2014 to 81% by July-September 2016, with as many as 87% of HIV-positive clients being screened in the targeted facilities during January-March 2016.

Improvements in initiating new and relapsed TB cases on antiretroviral therapy (ART) were also observed in the facilities implementing QI interventions. Initiating TB cases on ART had fallen from 70% in October-December 2013 to 48% in April-June 2014. The proportion of TB patients initiated on ART rose from 48% to 72% during July-September 2016, and increased to 94% by the end of July-September 2016 (Figure 4).

### Adherence to ART

The MOH began collecting ART adherence data in the DHIS 2 system in July 2015. The project is not able to fully assess the impact of QI interventions on adherence before this period. However, available data showed that QI interventions contributed to an increase in the proportion of clients reporting adherence to treatment at a level of more than 95% (high adherence), from 57% in July-September 2015 to 75% in July-September 2016 (Figure 5).

**Figure 3. Number of clients tested in outpatient departments**



**Figure 5. Percent of ART clients reporting >95% adherence**

