Chapter 14

Conclusion

Lani Rice Marquez and Alison Lucas

Abstract This concluding chapter summarizes learning from a selection of case studies on improving health care in low- and middle-income countries. This selection of quality improvement (QI) cases exposes students and practitioners to real examples of what health-care improvement efforts can achieve. While not glossing over difficulties, the cases presented seek to show how real teams and organizations dealt with challenges in QI implementation. These 12 cases illustrate the range of settings in which QI methods are effective and focus on different aspects of QI intervention design and implementation. Together, they paint a comprehensive picture of how QI methods have been applied to improve health care in low- and middle-income countries at all levels of the health system and show how different QI methods can be applied by health workers at each level. The cases also offer important insights into factors that facilitate results: a focus on reaching explicit standards, engaging health workers in identifying gaps in meeting standards and taking action to address the gaps, management support for QI and for intervening in the selected care area, tools to support data analysis, and facilitating friendly competition and sharing learning among improvement teams.

Keywords Audit and feedback · Coaching · Guidelines · Low- and middle-income countries · Quality improvement · Shared learning · Standards

This collection of cases from low- and middle-income countries seeks to show what quality improvement (QI) methods can achieve in practice. The structure of the QI initiatives described in the 12 cases ranges from individual facilities testing changes to resolve unique problems to improvement collaboratives with dozens of sites testing changes in the same care area and to coordinated national programs with

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hundreds of sites measuring quality with the same indicators. Collectively, the cases illustrate the QI process at all levels of the health system—community, health post, health center, district hospital, and referral hospital. The cases included in this book also deal with a wide variety of health-care issues, including HIV treatment, prevention of mother-to-child transmission of HIV, voluntary medical male circumcision, acute respiratory infections, tuberculosis-HIV co-infection, education and social protection of young children, nutrition and health promotion for pregnant women and children under two, antimicrobial resistance due to overuse of antibiotics, Zika prevention, and prevention of maternal deaths.

While all 12 cases took a quality improvement approach to making health care better, the cases applied different QI methods. Several cases relied on audit and feedback systems, assessing medical records for performance to specified care standards (Georgia, Ukraine, the Kyrgyz Republic, Honduras, Uganda). Another used an accreditation system to stimulate improvements in care processes (Kenya). Several cases used a collaborative approach to organize improvement in the same care area across multiple sites (Georgia, Uganda, India, Honduras). Another case emphasized the use of electronic medical records to facilitate real-time audit of HIV care to identify poor health outcomes at the national level and address gaps in care processes at the local level to reach national targets (Haiti). One team created flow charts to analyze where current gaps in service delivery existed and where changes could be made and used time series charts to track the effects of the changes made (Ukraine). Regardless of specific QI method, in general the efforts of health workers described in this book focused on assessing actual care and comparing it to expected standards of care, to understand the gap between the two in order to strategize about what could be done to close the gap.

To illustrate the many different approaches that have been applied to improve quality of care, Table 14.1 summarizes the care focus area and the QI methods applied in each case.

The cases also focus on different aspects of the QI process. Some cases describe in depth the process of forming QI teams and guiding them to conduct comprehensive baseline assessments, often based on detailed standards of care defined at the national level (Georgia, Tanzania, the Kyrgyz Republic, Honduras, Haiti, Mozambique, Uganda). One case from India profiles in depth the roles that different health authorities played in starting up and supporting QI activities, including the documents they developed to guide QI teams as well as the managerial and leadership structures needed to support QI work. Several cases detail the approach individual teams used to develop and test changes to improve care in a particular setting (Georgia, Guatemala, Tanzania, the Kyrgyz Republic, Honduras). One case focused on the use of QI methods to integrate gender considerations in the improvement of services to prevent mother-to-child transmission of HIV (Uganda).

The cases describe a wide range of approaches to training health workers in QI methods, from on-the-job training, as teams audited records to quantify gaps in care, to more formal QI courses lasting 1 or 2 weeks. Some cases emphasized the

Table 14.1 Care focus areas and QI methods applied in each case

Case country (lead author)	Focus areas	QI methods
Georgia (Chitashvili)	Treating respiratory tract infections in children	Audit of medical records in nine facilities and feedback to teams on baseline results showed the scope of overprescribing of non-evidence-based medications. The intervention included biweekly peer review of medical records and discussion of gaps in care and changes needed to improve care
Guatemala (Hurtado)	Improving health and nutrition counseling for mothers of young children	As part of a large-scale national improvement collaborative involving 166 health posts and 429 community centers, provided coaching support to community teams to improve mothers' knowledge of danger signs and appropriate feeding practices and increase the development of emergency birth plans, using lot quality assurance sampling to measure changes in maternal knowledge
Haiti (Bardfield)	Improving HIV patient care and outcomes with real-time access to patient data to guide clinical decision-making	National implementation of an electronic medical record system with a monthly review of reports on performance measures for core areas of care and generation of lists of active patients for care reminders, tracking of retention in care, identification of inactive patients and patients at risk of medication discontinuation, and identification of patients eligible for enrollment on antiretroviral therapy
Honduras (Banegas)	Integrating Zika counseling and screening in services for women of reproductive age	Preparation of national guidelines and implementation of an improvement collaborative involving 42 health facilities to improve Zika counseling in family planning services and prenatal care
India (Livesley)	Improving antenatal care, delivery, postnatal care, and essential newborn care services	Clinical trainings and coaching support to facility teams to identify root causes of poor quality in 4 hospitals, 8 community health centers, and 42 primary health centers in 1 district. Supported teams to test ideas to address these causes on a small scale and apply successful ideas to the entire facility
Kenya (Spieker)	Primary health care (outpatient services), inpatient care, surgical services, laboratory, and medical imaging	Embedding clinical and business quality standards and quality improvement methodology into the process of contracting health-care providers by the National Health Insurance Fund to guide improvement within a facility, incorporating pay for performance and reimbursement based on quality of care
Kyrgyz Republic (Smith)	Promoting the rational use of antibiotics for the treatment of common infections	Nine index conditions where antibiotics were often used inappropriately at primary and secondary care levels were identified, and clinical protocols developed for correct management of the conditions. Three districts were selected to pilot the protocols. Health workers were asked to audit their own medical records against standards of care to self-evaluate their performance and given specific feedback and job aids to promote adherence to standards

(continued)

Table 14.1 (continued)

Case country (lead author)	Focus areas	QI methods
Mozambique (Necochea)	Improving the quality of antenatal, labor and delivery, and postnatal care at health facilities	Application of standards-based management and recognition in 120 maternities; development of performance standards, implementation of the standards through facility assessments and improvement actions (using a tool developed to measure verification criteria for 81 performance standards), measurement of progress through review of the repeated assessments and tracking of selected indicators, and recognition of achievements
Tanzania (Nyagawa)	Improving quality of services for orphans and vulnerable children, including food and nutrition, shelter, family-based care and support, social protection and security, primary health care, psychosocial care and support, education and vocational training, and household economic strengthening	Collaborative approach to pilot national guidelines and QI activities in 31 small communities of 3 wards of one of 169 districts in the country through the efforts of the Most Vulnerable Children Committees and community-based organizations
Uganda (Byabagambi)	Addressing gaps in voluntary medical male circumcision service delivery to prevent HIV infection, using a collaborative improvement approach	In 30 sites, an external assessment team assessed male circumcision performance using a comprehensive quality assessment tool. At the end of each site assessment, the assessment team worked with site staff to develop an action plan that detailed the gaps identified, the interventions selected to fill the gap, the person responsible, and the timeline for implementing the interventions. After the baseline assessments, teams were trained and coached in how to test process changes and monitor the effects on indicators captured in the quality assessment tool
Uganda (Farmand)	Engaging men in prevention of mother-to-child transmission of HIV services	Testing gender-related changes in one rural health center to try to increase retention in care. The health center was one of 22 facilities in 6 districts that participated in the Partnership for HIV-Free Survival initiative to integrate nutrition support and counseling in HIV services
Ukraine (Rakhmanova)	Integrating HIV testing in tuberculosis services	Use of flow charts to map existing processes in order to quantify lost opportunities to test tuberculosis patients for HIV and identify process changes to increase uptake of HIV testing and counseling

collateral skills that health workers developed through the QI work, such as an ability to evaluate clinical evidence to judge whether care was in line with clinical best practices (Georgia, the Kyrgyz Republic).

What Do These Cases Tell Us About QI in Low- and Middle-Income Countries?

This case book shows that a quality improvement approach is effective in many diverse settings. It can work in both complex care settings and community settings. These cases do not point to a single preferred way of implementing QI. They show that many QI methods can yield results—that there is no “best way” to improve care. Many common methods proved effective and were feasible for health workers to implement: process mapping, audit and feedback, electronic medical records, and comparison to national guidelines. Regardless of the method, engagement of health workers in improving care was key.

The cases offer insights into factors that facilitate results, which can be emphasized in future QI initiatives. The most important key to success was a focus on reaching explicit standards and engaging health workers in identifying gaps in meeting standards and taking action to address the gaps. Teams were able to brainstorm and think through ways of improving adherence to standards. Some approaches (like standards-based management and recognition in Mozambique and accreditation in Kenya) introduced rewards for meeting standards, but from the information presented in the cases, it is not clear that such rewards produce better results than simply informing health workers of gaps in care. Similar improvements in care were achieved without explicit rewards for quality.

Data collection was something health workers were used to doing, but data *analysis* was a new skill for many. Tools that helped teams see changes in data in a simple or intuitive way allowed teams to easily understand what worked—and what did not. Electronic databases to automate the calculation of indicators and comparison across points in time facilitated interventions that involved the audit of many indicators or records. For smaller QI projects, use of spreadsheets and electronic databases automated the calculation and display of improvement data.

Building in mechanisms to share learning across QI teams as they tested different approaches improved the impact of QI efforts in many cases, as effective ways for improving care were shared among teams and scaled up to more sites.

QI teams achieved better results with strong support structures around them. We observed in many of these cases that QI initiatives work better with management support, mainly to help teams address system-level problems that are beyond the reach of individual QI teams. Many of the cases also emphasize the value of coaching support to help teams translate standards into practice. A key takeaway lesson for future QI initiatives is to build in adequate support for health workers as they

begin to apply QI methods—support in the application of QI methods and support for intervening in the particular care area.

A pilot approach can be useful to demonstrate results on a small scale before scaling up to multiple sites. Results at pilot sites helped create buy-in and political support for the QI approach at the administrative level of the health system, which in turn strengthened the efforts at the ground level.

We do not have data to compare the overall time and costs involved in spreading change ideas to many sites, so we cannot conclude which approaches were more cost-effective in reaching the most sites. We can, however, see that those QI initiatives with an explicit strategy for scaling up results or for achieving national scale with the intervention (India, Uganda, Haiti, Mozambique) were able to achieve results at a larger scale.

For many teams, a little friendly competition was a powerful motivator of change. Comparing performance between facilities and districts, while providing facility-specific feedback, stimulated the efforts of QI teams to modify practices. Health workers were motivated by evidence of how their practices deviated from the established practices or from the mean performance of other facilities in the same region.

These cases do not, however, tell us much about the sustainability of QI initiatives since all were short-term initiatives without long-term follow-up. The cases also involved differing levels of external technical assistance and did not attempt to measure the costs of the interventions, making it impossible to correlate results with the resources invested to achieve or sustain them. Future QI interventions will always be well served by building in measurement of costs to achieve results. In fact, automating and standardizing the documentation of costs of interventions are likely the only way to get at the question of cost-effectiveness of specific QI interventions since implementers' ad hoc cost analyses are likely to be biased in favor of their interventions.

As a collection, we hope these cases provide realistic descriptions of what QI looks like in practice—how actual health workers approached their improvement efforts—and illustrate the many ways that QI methods have contributed to improving health care in these countries. The authors' reflections at the end of each case provide further insights into what factors contributed to results in the specific case and draw on their wisdom to inform future QI efforts. The rich detail provided in these cases can also guide health workers in applying QI methods to specific care areas such as male circumcision, prevention of mother-to-child transmission of HIV, tuberculosis and HIV, and Zika prevention.

Above all, we hope these cases clearly demonstrate that QI methods can be productively applied to many care areas in low- and middle-income countries and that there is a rich body of expertise in QI in these countries that can and should be tapped as part of national efforts to improve care efficiency and effectiveness and produce better health outcomes.

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