

The role of quality improvement in strengthening health systems in developing countries

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Abstract

Quality of care was recognized as a key element for improved health outcomes and efficiency in the World Health Organization's (WHO) widely adopted framework for health system strengthening in resource-poor countries. Although modern approaches to improving quality are increasingly used globally, their adoption remains sporadic in developing countries. Healthcare leaders and improvement experts representing 15 countries met in October 2008 to catalyze the adoption of quality improvement (QI) methods to improve healthcare quality in resource-poor settings. This paper describes the evidence used to frame deliberations, the proceedings and a proposal for incorporating QI methods into plans for strengthening health systems. The conference participants presented case reports and reviewed a growing body of evidence from peer-reviewed journals demonstrating that QI methods can make significant contributions in resource poor settings. Deliberations focused on the barriers to adoption of QI methods and potential strategies for addressing those barriers. Attendees concluded that QI has the potential to optimize the use of limited resources available from governments and global initiatives targeted at achieving shared aims. Demonstrable improvements in quality may encourage greater investment in health systems in developing countries by increasing donor, population and governmental confidence that resources are being used well.

Keywords: quality improvement, healthcare systems, healthcare systems, developing countries

Introduction

The World Health Organization's (WHO) 2007 Framework for Action [1] 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. Despite this acknowledgement of the critical role of quality of care in strengthening health systems, there are few descriptions of how to insure high-quality health care in developing countries. While modern approaches to improving quality are increasingly used globally, their appropriateness for resource poor settings has received little attention and their adoption remains sporadic. How will the WHO Framework vision for high quality be achieved in the health systems of developing countries?

To better understand the potential role of approaches to improving quality (which we refer to as 'quality improvement (QI) methods' in strengthening health systems, 30 healthcare leaders and improvement experts from 15 countries met in October 2008 at the Rockefeller Foundation Bellagio Center

in Bellagio, Italy. Participants from ministries of health, public health institutions, international bodies, academia and QI organizations assembled to explore the issues surrounding the definition, assessment, assurance and improvement of the quality of health care in developing countries. This paper describes the evidence used to frame deliberations, the proceedings and the proposed plan that emerged.

Defining QI in a global context

The many definitions of quality underscore the different senses in which the term may be legitimately understood. Rather than attempt to re-define the meaning of quality in a global context, the group developed a shared understanding of the term 'quality improvement' to denote both a philosophy (the pursuit of continuous performance improvement) and a family of discrete technical and managerial methods. These methods include systematic examination of processes used in service delivery, operations research, teamwork

assessment and improvement, the optimal use of measurement and statistics in daily work, benchmarking and participative management techniques. We understood these methods as (i) focused on patients and their families and (ii) enabling both front-line providers of care and organizations within which they work to learn continually and to change the processes of care delivery with the goal of improved health outcomes.

Evidence for the effectiveness of QI in resource-poor settings

QI methods can achieve better health outcomes and greater efficiency in developed countries, but what is the evidence for their effectiveness in developing countries? Participants reviewed evidence from two sources: (i) descriptions of current operational programs in resource-poor settings from meeting participants and (ii) published literature. While both types of evidence had significant limitations they nonetheless provided a common knowledge base for the breadth of activities and the potential effectiveness of QI methods in resource poor settings.

Conference participants presented compelling examples of large-scale efforts (regional or country wide) to systematically improve the delivery of healthcare services. These examples came from efforts in India, Pakistan, Uganda, Niger and Mexico and focused on such disparate clinical areas as immunizations, eye care and hospital nosocomial infection rates [2].

While many if not most QI interventions are never published, nonetheless published descriptions of efforts to measure and improve the quality of health care in developing countries have proliferated over the past decade. Our searches unearthed previous literature reviews addressing the larger issue of healthcare quality and healthcare research in under-resourced settings. [3–5]. Of these reviews, however, none spoke directly to the body of published evidence related to QI initiatives in these settings. Our review found publications from numerous countries, including India, South Africa, Caribbean, South America and Asia. Given the burden of acute illness in resource poor settings, it is not surprising that many publications focused on acute illness care [5–10]. Nonetheless, we also found studies of improvement of prevention [11–15] and chronic condition care [16–18]. In addition, publications had focused on all of the IOM domains of quality, though many were focused on what might more appropriately be called ‘structural capacity.’

Table 1 presents some examples of clinical areas of population and individual health in which research has shown significant improvements in quality. Examples of the application of QI methods in emergency obstetrical care and acute child illness care can be characterized as having fairly homogeneous interventions and outcomes. On the other hand, literature on QI projects in primary care, health system improvements and prescribing practices included relatively diverse approaches and outcomes.

Overall, the literature on QI from developing countries represents a relatively small but growing body of research that

Table 1 Examples of clinical areas with literature describing significant improvement in quality in developing countries

Emergency obstetric care [21–23]
<i>Goal:</i> Reduce maternal and infant mortality
<i>Interventions:</i> Obstetric first aid box, training for medical personnel (with continuous QI, or CQI), community interventions to improve access
<i>Results:</i> Significant reductions in maternal mortality
Acute child illness care [24–28]
<i>Goal:</i> Reduce child mortality from acute infections
<i>Interventions:</i> Integrated management of childhood illness (IMCI, developed by WHO, UNICEF); a multi-level approach, including provider, facility, and community
<i>Results:</i> Increased adherence to guidelines, reductions in childhood mortality
Primary care [29–33]
<i>Goal:</i> Improve service efficiency and quality
<i>Interventions:</i> CQI, peer review, performance standards, training, electronic records
<i>Results:</i> Increased adherence to guidelines; increased efficiency (higher throughput)
Health system (microsystem level) [34–38].
<i>Goal:</i> Improve service efficiency and quality
<i>Interventions:</i> Introduction of management techniques, performance-based payments
<i>Results:</i> Higher quality and greater efficiency
Prescribing practices [39–42]
<i>Goals:</i> Improve appropriateness and safety of medication use
<i>Interventions:</i> National essential drug lists with guidelines, training, performance feedback, alternative payment options
<i>Results:</i> Increased appropriate prescribing practices

Source: Authors’ literature review.

has begun to identify what works to improve patient care and healthcare delivery. These examples of successful interventions appeared consistent with meta-analyses of QI from developed countries. Specifically, successful approaches were often multimodal, concurrently addressing providers, patients and system interventions. In addition, establishing standards (or guidelines) and then incorporating continuous measurement and feedback on progress appeared as a key component of many of the successful interventions. These examples also point to the value of and need for more QI research and impact evaluation in resource-poor settings.

Framing the deliberations

Having reviewed the evidence, participants made several observations that framed the groups’ approach to their deliberations. First, because the gap between the care that is currently delivered and the best possible care is often larger in resource-poor countries than in developed nations, QI may have even greater potential to improve health outcomes in resource poor settings. Second, participants agreed that

improving quality of care in developing countries will require effective QI activities at local, regional and national levels. Further, to the extent that they are not already present, QI methods will also need to be incorporated into programmatic initiatives operated by non-governmental organizations. Importantly, the group asserted that the multiple emerging efforts under the increasingly common banner of 'health system strengthening' should include specific plans for supporting QI. Third, the significant interest, experience and knowledge of QI methods that already exists in healthcare systems in the developing world are not spread adequately. While individual projects within organizations or health systems appeared as beacons of excellence, there are few reliable routes of site-to-site or nation-to-nation shared learning.

Fourth, the potential beneficial effects of QI on health system strengthening summarized above are not a panacea for the healthcare quality problems of developing countries. Nor are they easy to achieve. Consistently reaping the benefits of QI has proved difficult in resource-rich settings; achieving results in resource-poor settings will be at least as challenging, if not more so.

While these four considerations framed the deliberations of the participants, there was clear agreement about the significant opportunity to embed the principles of QI into developing nations' health systems as a fundamental tool to improve outcomes. Participants then faced several questions: How will widespread adoption of QI methods be achieved? How will QI methods be integrated into existing health systems? And how will these efforts be sustained for the long haul? Meeting participants identified the World Health Organization Health System Framework as a useful framework to organize how QI may be integrated with current efforts.

Integration of QI methods into the WHO framework

The WHO Framework included six building blocks of a health system as well as four outputs (Fig. 1. Quality was

characterized as one of the four mediators (along with access, coverage and safety) that connect the health system building blocks to the health system outputs. Using these components of the framework, participants assessed the possible mechanisms by which QI principles and methods could contribute to strengthening health systems. We have listed the initial ideas for proposed mechanisms below beside each of the six building blocks:

- *Service delivery*: QI closes the gap between actual and achievable practice.
- *Health workforce*: QI enhances the individual performance, satisfaction and retention.
- *Information*: QI enhances the development and adoption of information systems.
- *Medical products and technology*: QI improves the appropriate, evidence-based use of limited resources.
- *Financing*: QI helps optimize the use of limited resources. QI helps reduce the costs of financial transactions.
- *Leadership and governance*: QI strengthens measurement capacity, stewardship, accountability and transparency.

Participants agreed that more work would be required to further specify the methods by which QI could be used to strengthen each of the building blocks, as well as to describe the benefits that should be expected to accrue from such incorporation. Nonetheless, the familiarity of healthcare leaders from developing countries with the WHO Framework makes this a practical choice for organizing methods to incorporate QI into developing health systems.

Activating a QI movement in developing countries

Organizing the work of QI around the building blocks elaborated in the World Health Organization Framework would not by itself be sufficient for adoption of QI methods in developing countries. Participants agreed that improving the

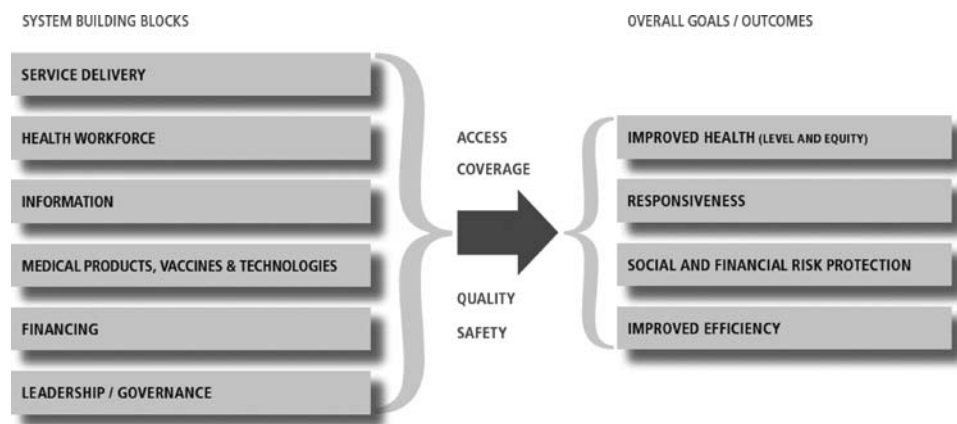


Figure 1 The WHO Health System Framework. Source: World Health Organization, 2007.

quality of healthcare in developing countries required extensive social and governmental interest in its progress—that is, creation of a quality movement. The group suggested several tactical steps toward activating such a movement. These tactics included (i) a commitment from the assembled group, (ii) methods for making the case among key stakeholders and (iii) methods for identifying and addressing barriers to QI adoption. These three points are further elaborated below.

Formation of a ‘quality improvement interest group’

Meeting participants committed to joining an ongoing ‘Quality Improvement Interest Group’ and recruiting others to this group. Activities for the group included gathering at international and regional events, making and sharing presentations related to the methods and effectiveness of quality improvement and contributing to a shared website to be constructed to facilitate the activities of the group.

Making the case for quality improvement in developing countries

Several important considerations were identified as critical to the process of promoting quality improvement in developing countries. These include both the macroenvironmental issues related to public health, global economics and political structures, as well the microenvironmental issues of health systems structures and region-specific population needs. The case for quality improvement was therefore thought to rely on the following three observations about the role of quality improvement in the healthcare systems of developing countries:

- (1) Quality improvement is both a political and healthcare management imperative. Quality improvement principles and methods can support greater equity and enhance the health and social outcomes for a given level of investment in particular clinical areas (such as safe motherhood and treatment of childhood illness, malaria and HIV/AIDS).
- (2) QI has the potential to optimize the use and reduce waste of the limited resources available from governments and global initiatives aimed at improving health, reducing poverty and actualizing social justice. Demonstrable improvements in quality of care, with associated better health outcomes, may in fact encourage greater investment in health systems by increasing donor, population and governmental confidence that resources are being used well.
- (3) QI in developing countries is an instrument for supporting current capacity-building efforts and realizing widely agreed-upon and shared aspirations. For example, the participants suggested that the ability of the WHO health system strengthening initiative to achieve health outcomes may actually depend on the use of effective QI methods. The evidence review

illustrated that QI can contribute to the achievement of specific Millennium Development Goals such as a reduction in maternal mortality [19].

Making the case for incorporating QI methods to improve health outcomes in developing countries involves both establishing a body of evidence that documents the potential benefits and effectively communicating that evidence. Beyond making the case, the evidence needs to be pragmatic and easily translated into practice in real-world settings. The knowledge base can be derived from the existing evidence, the generation of new evidence, as well as the documented experience of demonstrating projects and pilot sites. Like all advances, if QI demonstrates effectiveness at improving health outcomes then the techniques will become widely adopted, catalysed by coalitions that can help spread the advances more quickly through both grass-roots initiatives and the persuasion of leaders at all levels of healthcare systems.

Overcoming barriers to global QI adoption

Many obstacles exist to widespread adoption of QI methods in developing countries. Among these, participants identified four major barriers: the lack of visibility of the issue; the current glut of international and regional healthcare initiatives; the difficulties associated with embedding QI within existing health system structures; and the financing of QI.

- (1) *Lack of visibility and technical detail*: The WHO Health System Framework asserts that quality mediates the relationship between the system building blocks and improved health outcomes (see Fig. 1). The document, however, contains few details regarding what the term ‘quality’ means or how it is achieved. This lack of attention to how QI is actually implemented is emblematic; QI is often implicit in policy and management guidance, but few international or national initiatives identify the discrete processes and interventions most likely to achieve desired outcomes. A key question is: ‘How might the visibility and technical knowledge of QI in discussions on global health be improved?’
- (2) *Glut of global health initiatives*: The large number of global health initiatives competing for attention and funding suggests that another initiative focused on QI is likely to be viewed as unproductive. Indeed, an effort to introduce a new initiative could add confusion rather than provide clarity.
- (3) *Embedding QI within existing health system structures*: The principles of QI can be taught and demonstrated, but typically the work of QI, if pursued at all, is simply layered onto the work of service delivery. For local health systems to be strengthened by QI, it must ultimately be built into existing policies and infrastructure; it must become part of the fabric of care itself, not separated as a ‘program.’
- (4) *Financing of QI*: The additional resources necessary to support QI, though relatively modest, will compete

with investment in other important activities such as poverty reduction. One approach to addressing this issue is to allocate a small percentage of the future growth in health spending to the assessment and continual improvement of the quality of health care. [20]. The capacity to plan and guide QI lies within the already existent healthcare institutions and ministries of health in some developing nations; where this is not yet the case, partnerships between local health systems with international programs and suppliers of QI technical assistance may provide an expedient, transitional way forward.

Consensual action plan and recommendations

Meeting participants constructed an action plan and set of recommendations based on the assessment of the barriers enumerated above. The group envisioned a five-part process to ensure that QI becomes central to relevant policy-making and practice in developing countries:

- (1) Launching the QI Interest Group to sustain activity, provide a detailed survey of the QI landscape, acquire a deeper understanding of the current state of knowledge and activity in application of QI in health systems in developing countries and facilitate dissemination of this acquired information.
- (2) Making the case for the importance of incorporating QI methods into existing health system improvement efforts through publications and targeted communications.
- (3) Learning from existing QI programs and projects in developing countries, especially those focused on improving healthcare quality at a national scale, as well as developing new demonstration sites as appropriate and feasible (given available funding and political support).
- (4) Building a coalition for quality in developing countries—potential partners include national ministries, regional offices and programs, multilateral initiatives, political leaders and civil society.
- (5) Planning for a World Health Assembly Resolution on quality of health care by 2011.

Conclusion

Strengthening health systems is a critical pre-condition for achieving the globally agreed-upon aspirations reflected in the Millennium Development Goals and other high-profile efforts to improve world health. QI methods can make a significant contribution towards achieving these goals. To do so, QI initiatives must facilitate efforts to reduce poverty and should not be used as an alternative to increasing investments in health care in developing nations. New investment in structural capacity to deliver health services is a prerequisite for health system strengthening, but, given any level of

investment, a focus on QI has the potential to achieve better outcomes for patients and communities.

Several decades of proven improvements in health care in developed countries have demonstrated that quality principles and methods can produce better outcomes. High-quality health care ought not to be an extravagance reserved only for the more affluent countries; it is now an imperative to strengthen health systems in developing countries.

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