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“Although designed specifically for introduction of a new monitoring system in the general care setting where none previously existed, the described methods are largely generalizable to a wide variety of systems where patient monitoring is in place to prevent harm.”

—*Surveillance Monitoring Management for General Care Units: Strategy, Design, and Implementation* (p. 300)



Designing a Patient Surveillance Monitoring System for General Care Units

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Tool Tutorial

A National Organizational Assessment (NOA) to Build Sustainable Quality Management Programs in Low- and Middle-Income Countries

Readers may submit Tool Tutorial inquiries and submissions to Steven Berman, sberman@jcrinc.com.

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National governments in low- and middle-income countries (LMICs) are challenged with integrating quality improvement (QI) into all levels of health systems and managing requirements from multiple donors and/or funders. The sustainability of quality management (QM) programs, which include the structures, processes, and functions that support performance measurement and QI activities, has often proven challenging in any setting. Capacity-building for sustainable national QM programs requires development and implementation of systems and processes and organizational commitment, backed by the availability and allocation of human and financial resources, to achieve a high-functioning QM program that leads to improved patient outcomes and population health.

Although a number of health care quality assessment tools have been described in the literature,^{1,2} many focus on facility-level or organizational characteristics, while others exclusively focus on quality culture and/or patient safety.³ There is a modest body of literature on organizational assessment (OA) in primary care in Australia,¹ as well as in the United States and the United Kingdom,² but few peer-reviewed articles on these types of assessments from multiple countries and little specific detail on the tools themselves or how they are implemented, particularly in LMICs.^{2,4}

HEALTHQUAL International (HQI) is a capacity-building initiative working globally in LMICs, which is based at the New York State Department of Health AIDS Institute (New York City) and supported by the Health Resources and Services Administration (HRSA) through the President's Emergency Plan

for AIDS Relief (PEPFAR). HQI facilitates sustainable national and clinic-based QM programs in LMICs through a public health, peer-to-peer government-led approach to QM in support of national QM programs.⁵ Through this work, HQI developed a national organizational assessment (NOA) tool of core national QM program components to support the development and maturity of national improvement work in each participating country; the tool is accessible.⁶ Although the NOA was originally conceived as an HIV-program-specific tool, it has since been adapted to address systemwide QM program components. These components are categorized by program domain and mapped to steps toward achievement of a sustainable national QM program. The NOA facilitates identification of strengths and gaps to target capacity-building needs. While the NOA is specifically designed to build capacity at the government level, development of skills and competencies for health care workers and within organizations was a principal consideration in development of the tool and is integrated into specific domains.

Core domains of the NOA are consistent with components of other organizational criteria for quality, such as the World Health Organization's (WHO) Organizational Requirements for a Quality Management System,⁷ the National Association of County and City Health Officials' (NACCHO) Foundational Elements of a QI Culture,⁸ the Institute for Healthcare Improvement's Capability (IHI) Self-Assessment Tool,⁹ and the Baldrige Criteria.¹⁰ Although the Baldrige and IHI tools list specific organizational criteria, they are not deliberately designed for low-resource settings. The WHO and NACCHO tools function as content guides offering descriptive narratives but are not designed as formal assessments to be used at the national level to determine gaps in quality and priorities to target future work.

The HQI NOA is a formal scored quantitative assessment of core QM components that is intended to systematically assess and reassess capacity-building gaps and needs within a coun-

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try's Ministry of Health (MOH), with a focus on using data for improvement.

Through sequential measurement and analysis of NOA data, HQI is able to identify and quantify the stage of national QM implementation and magnitude of barriers to sustainable QM within governments, including how it penetrates through sub-national levels. The NOA can be indexed and trended over time to measure facility needs, as well as overall growth of the national program.

Tool Development

The HQI NOA represents the culmination of 10 years of continuous adaptation and refinement of an OA originally designed to assess facility-level quality programs in New York State as part of a formal statewide quality of care program.¹¹ Expanding on the facility-level New York State OA, the NOA was originally adapted for MOHs and implemented for international use in 2007, when it was first introduced in Mozambique and Uganda. In 2009 the tool was subsequently introduced and has been used with MOH teams from Haiti, Kenya, Namibia, Swaziland, and Guyana, and in 2012 in Nigeria, Zambia, Zimbabwe, Rwanda, Vietnam, and Papua New Guinea. In early 2014 the NOA was the subject of a structured one-day workshop involving MOH leadership, program coordinators, and data managers in 15 countries implementing national QM programs in Africa, Asia, and the Caribbean, many of whom have used the NOA to assess their own national programs. Formal feedback from this working session informed a subsequent revision, presented here.

From 2007 through 2013, the NOA was developed and validated through iterative cycles of previous qualitative and quantitative analysis, and then, from 2014 through 2015, it was further refined through a formal revision process with input from national QM teams representing 10 countries supported by PEPFAR.¹²

Tool Description

The NOA measures elements of governance related to QM of HIV programs and other areas in a total of 8 domains—leadership, QM plan, human resource management, patient and community involvement, performance measurement, organizational infrastructure, capacity-building, and achievement of outcomes—and 13 subdomains⁶ (Sidebar 1, right). While each of the domains represents essential components of a sustainable national quality program, language describing subdomains is designed to be adaptable to country context.

DOMAINS

We now describe each of the eight domains.

Sidebar 1. National Organizational Assessment Domains	
Leadership	
Quality Management Plan	<ul style="list-style-type: none"> • Quality management plan • Quality management workplan • Sustainability plan
Human Resource Management	
Patient and Community Involvement	
Performance Measurement	<ul style="list-style-type: none"> • Data collection and analysis • Use of data for improvement
Organizational Infrastructure	<ul style="list-style-type: none"> • National quality management committee • Collection of evidence linked to improvement • National quality improvement projects • Knowledge management
Capacity Building	<ul style="list-style-type: none"> • Coaching and mentoring • Training • Peer learning • Patient safety
Achievement of Outcomes	

A. Leadership. Although the definition of a “leader” will vary from country to country and program to program, the activities and functions of individuals identified under this domain should meet the specified criteria. Senior MOH leadership should be responsible for creating and fostering an environment/culture that supports QI learning, skills building, communication, teamwork, measurement, reliability, transparency, and safety. These components should be standard on the path to building a sustainable national QM program and in establishing a vision of shared values, attitudes, and beliefs throughout the organization.

B. Quality Management Plan. Each national QM program should have a written plan describing leadership and roles, organizational processes for setting improvement priorities and goals, planning and allocating resources for quality activities, and assigning time lines to achieve desired results.

Each national QM plan should incorporate a workplan (subdomain B.2) detailing implementation activities to achieve specified goals (and time lines) and corresponding actions, with assigned responsibilities, appropriate resources, and accountability. Further, the national QM program should be planning for sustainability (subdomain B.3) and integration throughout the MOH, including fiscal autonomy from external donor funding.

C. Human Resource Management. The health workforce should actively participate in implementing and refining the national QM plan and achieving a sustainable national QM program.

To reinforce these processes, the workforce is provided routine coaching, mentoring, and peer learning to enhance improvement knowledge, skills, and competencies in QI methods required to fully implement sustainable QI work. Engagement of the workforce involves recognition of achievement, full engagement in QI throughout the health sector, integration of QI into preservice education, representation from all professional councils and groups in the national technical working group, formal and informal discussions focused on teamwork and leadership, and opportunities for workforce input to inform the national QM program.

D. Patient and Community Involvement. Patient and community engagement is key to understanding priorities for improving care. Patients, families, and community members should be actively engaged in planning and participating in the QM program at all levels—national, regional, and local. Routine input through formal and informal channels is essential to this process, as well as active involvement in educational activities, outreach, and identification of resources.

Gaining buy-in from the involved community, whether geographic or representing a key population, or whether composed of representatives of national People Living with HIV (PLHIV) networks, is key to the success of improvement activities. Involving the community in design and measure development enhances its members' participation and contributes important dimensions of quality and related experiences that are not accounted for otherwise. *Involvement* specifically refers to participating in improvement teams that investigate processes and identify areas for improvement, participating in organizational QI committees, and reviewing performance measurement data, among other activities.

E. Performance Measurement. The national QM program develops and implements a clinical data collection system from which local performance measurement data on prioritized measures are collected, aggregated nationally, and analyzed for local and national improvement. Data collection follows standardized methods and a time line, as prescribed in the QM plan. Clinical performance data should then be used to identify areas for improvement—and inform program planning and national decision making/priorities. This system is ideally related to point-of-care data management but can be a separate data reporting system if no other mechanism can meet this need.

F. Organizational Infrastructure. The organizational infrastructure includes a formal national QM committee (subdomain F.1) with appropriate membership and associated technical working groups that provide routine technical guidance and feedback to national QM program leadership and staff; systematic collection and communication of evidence linked to im-

provement implementation to improve care and organizational learning (subdomain F.2); implementation of national QI activities to improve population health and/or quality of care issues (subdomain F.3); and knowledge management to demonstrate results, share improvement work and successful strategies, and support implementation (subdomain F.4).

G. Capacity Building. Capacity-building activities revolve around coaching, mentoring, and training (subdomains G.1 and G.2) at the national MOH and local health care provider levels, with a focus on building both knowledge and practical skills for implementation of a sustainable national QM program. This includes promotion of systematic peer learning strategies (subdomain G.3), facilitated through formal mechanisms, including regional QM groups, to accelerate implementation nationally and throughout the public health system. Capacity-building integrates specific activities to reinforce patient safety and reduction of medical error (subdomain G.4).

H. Achievement of Outcomes. The QM program should demonstrate evidence of measurable improvement in clinical performance measures based on national benchmarks, organizational goals, and priorities across all service areas. Results of these measures are tracked, routinely captured in performance data reports showing trends, and disseminated internally and externally.

Tool Application to Quality and Safety

The NOA is designed to provide critical information for leadership to assess progress in achieving quality and safety goals. This is accomplished by identifying gaps and priorities, as well as in decision making based on findings to improve quality of care.

Tool Application Settings

The NOA, which is designed to assess national infrastructure for health care quality in the public health system within MOHs in LMICs, can also be adapted by upper-income countries for their own use. It can also be adapted to regional/district levels and to evaluate disease-specific programs. For example, an HIV-specific facility-level version of the tool is currently in use in subSaharan Africa, Asia, and the Caribbean, as well as in the United States—including throughout New York State among clinical HIV programs. The tool may be applied to national HIV quality programs or the entire national QM system.

How To

The NOA is administered through interview and appreciative inquiry,¹³ which entails dialogue between HQI and the national leaders of the QM programs in-country. It can be administered by a QI coach or as a self-assessment.

SCORING

The NOA is scored from 0 to 5, where each numeric score corresponds to a series of checkboxes describing activities and elements of that domain. Scoring is progressive; elements in one section build on the next. All the elements associated with a particular score must be met to receive that score. If all of the boxes are not checked within one particular score section, then the score should be the preceding number. To score “2,” for example, each box for the elements corresponding to that score section must be checked. Applied annually, this assessment will help a national QM program evaluate its progress and guide the development of goals and objectives. A program may decide to check boxes for criteria in some of the higher scores and use the information identified by the unchecked boxes to address gaps in the program that will help them meet the higher score.

NOA RESULTS

Results are used to identify gaps and weaknesses, develop national priorities, target technical assistance (TA) to those priorities, and create improvement strategies. The results are ideally used to develop a workplan for each element, with specific action steps and time lines guiding the planning process to focus on priorities, set direction, and ensure that resources are allocated for the QM program. Results of the NOA should be communicated to internal key stakeholders, leadership, and staff. Engagement of MOH leadership and health care personnel is critical to ensure buy-in across departments—and is essential for translating results into improvement practice.

CASE STUDY

The following case study, which pertains to a de-identified country, is designed to illustrate how the NOA is applied, scored, and used for program planning and to prioritize TA activities to facilitate advancement of a national quality program along the spectrum of implementation maturity.

Beginning in 2007, the MOH, with technical assistance from the local country-level Centers for Disease Control and Prevention (CDC) office* and HEALTHQUAL International, piloted a national HIVQUAL (HQ) program to establish and support national quality improvement processes for HIV care and treatment in-country. Beginning in 16 clinics, data collection and QI project implementation expanded to 38 HIV care and treatment facilities in all 34 health districts. HQ conducted submission of 10 consecutive rounds of performance measurement data from health care facilities between July 2007 and

* Affiliated with the U.S. Centers for Disease Control and Prevention.

Table 1. Excerpt of HIV Quality Program 2015 National Organizational Assessment Scores and Recommendations

Domain	Score	Recommendations
A.1	3	<ul style="list-style-type: none"> • Focus on securing financial resources to support program sustainability. • Need to implement stand-alone quality meetings for HIV program.
B.1	2	<ul style="list-style-type: none"> • Need to finalize strategic plan. Draft to be approved by senior management.
B.2	3	<ul style="list-style-type: none"> • Existing workplan needs to be updated.
B.3	5	<ul style="list-style-type: none"> • National quality program has a formal sustainability plan that encompasses the HIV quality program.
C.1	2	<ul style="list-style-type: none"> • Need to implement a formal process for routinely recognizing staff performance, otherwise all other components are met for score 4.
D.1	1	<ul style="list-style-type: none"> • A renewed focus on involving patients and the community is critical.
E.1	4	<ul style="list-style-type: none"> • Missing information on key populations • No formal data quality assurance process embedded • System review is informal but not systematic.
E.2	2	<ul style="list-style-type: none"> • HIV program disseminates best practices but not evaluation results and not to the general public.

March 2013 representing > 37,000 individual patient charts sampled across review periods.

The most recent NOA was conducted by the country team in February 2015. The assessment was performed by the HQ core team, including the HQ MOH QI focal person, the national QM program manager (non-HIV) and the CDC-country officer assigned to HQ. HQI facilitated the discussion and provided technical guidance in tool application and scoring. First, the HQ core team individually reviewed the NOA criteria to determine how they would score each section. The team discussed each domain in a stepwise process with an HQI mentor, which involved considering each criterion in a specific section and identifying and agreeing on which criteria have been successfully met to achieve a given score and which require additional attention. This approach uncovers areas of programmatic strength and weakness, as well as opportunities to refocus activities and resources to advance QM program maturity. During each NOA, detailed notes are transcribed and used to update the quality program workplan to determine next steps both for individual domains and to prioritize which domains require the greatest level of attention based on the score and national priorities (Table 1, above).

The NOA has functioned as a road map for this country's national quality of care activities and is the basis for evaluating organizational progress toward a sustainable national QM program. In this country, following the NOA scoring process in previous years led to the development and implementation of a standardized approach for performance measurement, including national indicators, methodology for measurement, and completed rounds of data collection. Scoring the NOA through interactive discussion has led to increased knowledge of the next steps required for continuing development of a sustainable national program, and informed the type of support needed for clinics to develop QM programs. Specifically, capacity to use data and support QI was noted, with aggregated performance data used to identify national program needs, such as standardized alcohol and food security screening tools and efforts to increase provision of tuberculosis isoniazid preventive therapy (IPT), as well as CD4 testing availability. With evidence of progress in some of these areas, NOA data from 2015 demonstrated a continued need for securing financial resources to support program sustainability, finalization of a written strategic plan, updating the existing national program workplan, a renewed focus on consumer/community engagement, and advancement of regional peer learning networks. National support for these recommendations, as shown in Table 1, is strong. A MOH-sponsored training on consumer involvement in facility-level QM programs and QI project teams was convened in January 2016, and regional coaches and regional committees were created to address local needs for QM and improvement. In addition, the NOA is used by government-supported regional mentors to assess the health care facilities and identify critical gaps requiring support.

The tool has also evidenced adaptability not only to country context, but also for application beyond HIV to public health systems and general processes of care. In this case, an adaptation of the NOA template was one of the tools used for a broader QM program infrastructure assessment conducted by the MOH in 2012 and published in 2014. Results of the assessment were pivotal to informing key priorities for the national quality program policy and strategic plan. It was also helpful in identifying some of the critical structures and functions of the MOH's new National Quality Management Directorate, including core functions of leadership at all levels and linking activities between national, regional, district, and facility levels within the public health sector. Other specific initiatives, besides involving consumers, included providing for coaching systems and mechanisms of recognition and reward. This informed the structures of the QM directorate to ensure sustainability. These changes

were accepted enthusiastically by ministry leadership and ultimately adopted by the Civil Service Commission. As this country continues to implement its national Quality Management Policy, the NOA will serve as a key resource for continued assessment and informing priorities for program development of health sector-wide QM activities.

The MOH QI team has used NOA results to identify organizational gaps and define specific steps for scale-up and spread of the national QM program. Ultimately, this process has informed national improvement priorities and policy-making decisions aimed at improving HIV care and treatment outcomes.

Results and Lessons Learned

Of the 13 countries for which an NOA has been conducted, 7 have had one or more assessments conducted since 2007. All 7 improved in at least one component of QM planning, and 6 improved in organizational infrastructure components, 2 of which experienced a backslide in one or more components. Two countries of the 7 countries improved in all three components of implementation; 5 in two of three components, which were lacking in implementation of national QI projects. Heat maps, which depict NOA scores, are one strategy for tracking progress over time to clearly identify domains for more focused attention. A heat map for four countries is shown in Figure 1 (page 330, available in color in online article). Consistently low scores on one area or even backslides should be used to drive targets for future work. Examples of improvement strategies through the NOA include development of a national set of quality indicators; convening a national key stakeholders group to oversee activities; implementation of national QI initiatives based on data and country priorities (food security, mother-to-child HIV transmission); and development of a national QI strategic plan and quality standards.

Summary and Next Steps

Conducting the NOA annually supports leadership in QM planning conducted to maintain focus on national priorities and achievement of improvement goals. Over time, a country's MOH may discover the need to redirect its program to incorporate additional performance measures or different QI leadership structures to continuously meet changing needs identified through the NOA. Consequently, QI spread and sustainability through system change, coaching, and learning are reinforced.

Challenges for implementation of sustainable national QM programs in LMICs include aligning multiple vertical programs (HIV, tuberculosis, malaria) with general ministry functions; lack of knowledgeable leadership and/or turnover of leadership

2015 National Organizational Assessment (NOA) Scores by Domain for Four Countries

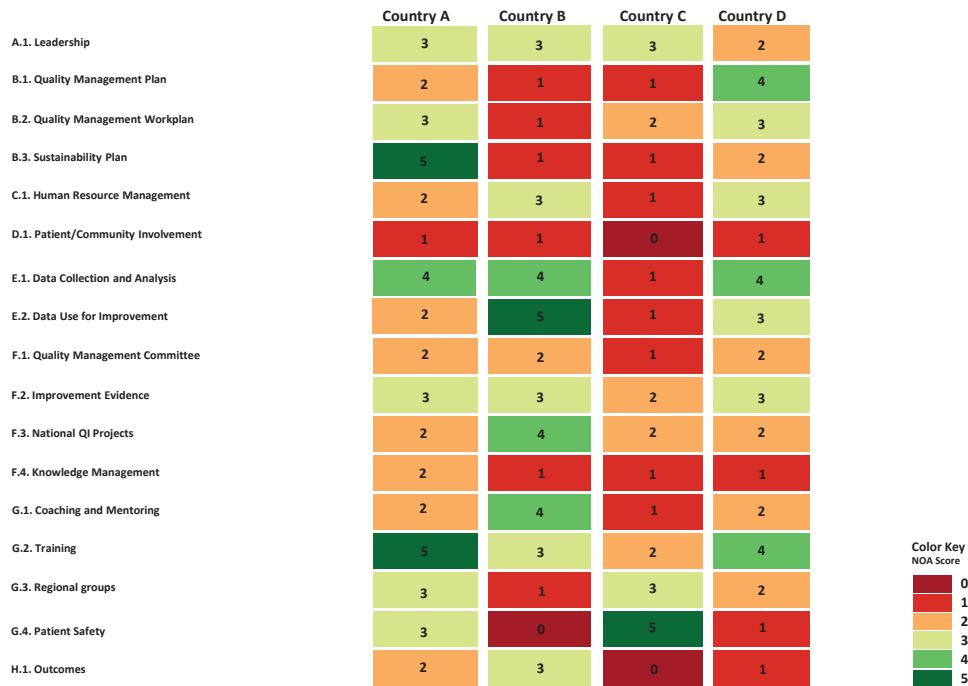


Figure 1. Heat maps, which depict NOA scores, are one strategy for tracking progress over time to clearly identify domains for more focused attention. A heat map for four countries is shown. Available in color in online article.

in key positions; high burden of data collection and reporting; training/retraining staff; changes in clinical guidelines; and linking strategies to implementation. **J**

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