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Developing hospital accreditation standards in Uganda

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SUMMARY

Background Whereas accreditation is widely used as a tool to improve quality of healthcare in the developed world, it is a concept not well adapted in most developing countries for a host of reasons, including insufficient incentives, insufficient training and a shortage of human and material resources. The purpose of this paper is to describe refining use and outcomes of a self-assessment hospital accreditation tool developed for a resource-limited context.
Methods We invited 60 stakeholders to review a set of standards (from which a self-assessment tool was developed), and subsequently refined them to include 485 standards in 7 domains. We then invited 60 hospitals to test them. A study team traveled to each of the 40 hospitals that agreed to participate providing training and debrief the self-assessment. The study was completed in 8 weeks.
Results Hospital self-assessments revealed hospitals were remarkably open to frank rating of their performance and willing to rank all 485 measures. Good performance was measured in outreach programs, availability of some types of equipment and running water, 24-h staff calls systems, clinical guidelines and waste segregation. Poor performance was measured in care for the vulnerable, staff living quarters, physician performance reviews, patient satisfaction surveys and sterilizing equipment.
Conclusion We have demonstrated the feasibility of a self-assessment approach to hospital standards in low-income country setting. This low-cost approach may be used as a good precursor to establishing a national accreditation body, as indicated by the Ministry's efforts to take the next steps. Copyright © 2015 John Wiley & Sons, Ltd.

KEY WORDS: accreditation; hospitals; standards; Africa; Uganda

INTRODUCTION

Ensuring equitable access to modern, quality health services, especially in resource-limited settings, poses significant technical and management challenges for

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Ministries of Health. The variation in quality and scope of services between and among districts and facilities is a common feature of most health systems, with predictably more and better offerings in urban and wealthier communities. Accreditation is a governance and management tool long employed in high-income countries. It is used in both health and educational institutions to establish standards, improve quality and ensure equity. It is the process of review that healthcare organizations, in this case hospitals, participate in to demonstrate the ability to meet predetermined standards of practice or care established by a professional authority or agency. Accreditation tools outline such standards and predetermined criteria and how to assess them (Jacobalis, 1989; Muller *et al*., 1995; Nandraj *et al*., 2001; Ammar *et al*., 2007; El-Jardali, 2007; Peters and Muraleedharan, 2008; Saleh *et al*., 2013). Increasingly, Ministries of Health and Education are innovating accreditation schemes in low-income settings in the hope of harmonizing and standardizing services. Progress is limited, however, because standards not tied to incentives fail to motivate adherence, because there is insufficient training in administering standards, and because there is a shortage of human and material resources (Bouchet *et al*., 2002; Bukonda *et al*., 2002; Galukande *et al*., 2009; Galukande *et al*., 2010).

The Uganda Ministry of Health (hereafter, Ministry) sponsored the National Supervision Guidelines for Health Services, also known as the Yellow Star System, in 2000 (Ministry of Health and Republic of Uganda, 2000). The program was discontinued a few years later (2005) when United States Agency for International Development funding ran out, in part because of the loss of resources, but perhaps also because these standards were not sufficiently embraced as Uganda-owned. Unfortunately, the phenomenon of "fizzling out" is a common story for accreditation programs in low-income countries, especially when they are launched by aid organizations rather than Ministries. Standards often fail to align with both budgetary realities and sustainable incentive systems (Bukonda *et al*., 2002).

Our project was an attempt to expand an accreditation scheme that followed a small initial pilot (Bateganya *et al*., 2009).

Currently, there is no uniform standard or accreditation process on which to judge hospital performance in Uganda, despite some evidence that accreditation has been associated with the improvement in quality of healthcare in other settings (Whittaker *et al*., 1994; Whittaker *et al*., 2000; El-Jardali *et al*., 2008; Thornlow and Merwin, 2009; Flodgren *et al*., 2011; Andualem *et al*., 2012). After developing the standards, we asked key Ugandan stakeholders to refine them and then tested the ability and willingness of 40 hospital administrators to administer them in their hospitals. Our team, based at the College of Health Sciences at Makerere University and the School of Public Health at the University of Washington, worked in collaboration with the Ministry of Health.

METHODS

This cross-sectional descriptive study was funded by the Seattle-based Washington Global Health Alliance, after faculty members at Makerere University and the University of Washington worked with Ministry officials to write a response to a request for proposals.

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Developing the standards

To develop the instrument for measuring performance against standards, we began with a set of standards that were developed for an initial intensive four-hospital pilot, described elsewhere (Bateganya *et al*., 2009). These initial standards reflected the result of an intensive literature review, including both PubMed searches and gray literature using search terms such as "hospital accreditation," and "hospital standards," along with "Africa" and "developing countries." A principal in the development of these standards (author S. B.) had a decade of experience as a medical director in a large teaching hospital in Seattle, Washington, where he became familiar with the standards of the organization then known as the Joint Commission on the Accreditation of Healthcare Organizations (Joint Commission on Accreditation of Healthcare Organizations, 2013). We examined the work carried out in Zambia and Lebanon, along with World Federation of Medical Education standards and World Bank reports, among other sources (Ammar *et al*., 2007; Bouchet *et al*., 2002; World Federation of Medical Education, 2001; International Society for Quality in Health Care, 2006).

Individuals familiar with the health policy scene in Uganda developed a list of stakeholders who would likely have views and expertise to contribute to the topic of hospital standards in Uganda. These individuals were invited to a meeting to hear the results of the initial four-hospital pilot and then participated in a detailed discussion of what should be included in standards and who might be the appropriate authoritative body to administer them or they should be self-administered.

The meeting, held in November of 2008 at a downtown mid-range hotel in Kampala, attracted 34 participants. Attendees included the Ministry of Health (specifically, the Commissioner for Planning), a representative of the Uganda National Bureau of Standards, District Health Officers, hospital directors, representatives from the Uganda Medical Associations of (Surgeons, Obstetricians and Gynecologists, Orthopaedic, Nursing and Midwifery), a World Health Organization representative, five heads of departments from Makerere University College of Health Sciences (Surgery, Obstetrics and Gynecology, Orthopedic, Anesthesia and Medicine), several senior private practitioners and collaborators from University of Washington.

At the meeting, the standards were presented to participants for their consideration. Seven small groups broke out, each to address one of the seven domains in the original proposed standards. After 70 min of discussion, the full plenary group reassembled. Each group presented a set of recommended changes to its domain using PowerPoint, and the full group discussed the proposed changes. There were side caucuses and impassioned speeches in defense of or in opposition to some standards and domains, indicating good engagement of the participants.

At the end of the workshop, the investigators assembled the notes and flipchart recordings and arrived at a final set of 485 standards under the seven domains. Most of the domains proposed at the beginning of the meeting remained the same, with the exception that one was dropped (equity), one was added (clinical services) and one

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was reframed (records and health management information systems rather than "medical records"). See Table 1 in the final set of domains. Similarities to the World Health Organization's six "building blocks" of health systems are noted (World Health Organization, 2007).

Following the workshop, project principals (the authors of this paper) prepared a two-tiered system of standards. First, a basic checklist was established as the minimum acceptable set of standards. A set of aspirational standards was appended as a more advanced guide. This two-level scheme is similar to quality standards defined elsewhere (Ammar *et al*., 2007; World Federation of Medical Education, 2001). The idea is to provide an entry point for all hospitals and to ensure participation by the most rudimentary of facilities as well as those that have more resources.

Testing the standards

The sampling frame was all 131 Ugandan hospitals, including 39 district public hospitals, 54 non-governmental (generally religiously affiliated), 9 other governmental and 17 private hospitals. We randomly selected 60 of these after stratifying by region, ownership of the hospital and level of care. After dropping 20 hospitals that either failed to complete the assessment or did not wish to participate (generally citing staff shortages or time constraints), 40 of the hospitals we invited to participate completed the self-survey. The instruments were anonymous, but hospitals were requested to name some characteristics of their facility.

The study team, consisting of authors M. G., A. K., R. B. and S. L., traveled to each site to introduce the survey tool and train the hospital staff who were available to participate in this study. They included medical superintendents, nursing officers, in charge of heads of units and administrators who administered the self-assessment tool. The investigators remained on site for a full day to offer clarifications and answer questions. They then validated the responses with the participants in a debriefing session at the end of the day after staff attempted to complete the self-assessment survey. The study team went through the survey tool, section by section, to ascertain the accuracy and consistency of staff ratings. It took between 1 and 3 days for all sections of the survey tool to be completed, depending on the work schedule of a particular hospital. If the hospital was not able to complete the survey on the first day before the study team left, the instruments were collected by researchers, returned by courier or delivered by a hospital representative to researcher offices on the Makerere campus.

Table 1. Hospitals standards categories

1. Governance, management and leadership
2. Quality improvement and patient safety
3. Physical infrastructure
4. Human resource management
5. Clinical services
6. Records and health management information systems
7. Infection control and waste management

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The accreditation survey instrument consisted of a hospital self-assessment checklist, using 485 standards in seven domains. Standards were measured with check boxes under the categories of "no compliance", "unsatisfactory compliance" for partial compliance or "satisfactory compliance". (The instrument is available upon request to the author.)

Institutional review boards approved the study at both Makerere University and the University of Washington.

Data were analyzed using Epi data 3.1 version software.

RESULTS

Forty of the 60 selected hospitals chose to participate, representing a 67% response rate. Most were general hospitals (33, 83%); six were regional referral hospitals, and one hospital did not indicate its status. The Ministry operated 22 of the hospitals, (55%), while non-profit faith-based organizations operated 8 (20%). In approximate representation of the distribution of religious hospitals in Uganda, eight were Catholic, two were Protestant and one was Muslim. The remaining seven were either public or private, one-third of the hospitals reported occupancy rates of 70% or lower; see Table 2.

In Table 3, we present the ratings hospitals recorded for their own performance on selected representative items within each of the seven domains. The standards we report are those we felt were most representative of the domain and where we could illustrate the widest disparities across hospitals.

Table 2. Hospitals in the standards self-assessment study

Level of hospital	
General hospital	33
Regional referral hospital	6
Not recorded	1
Ownership of hospital	
Government	24
Uganda Catholic Medical Bureau	8
Uganda Protestant Medical Bureau	2
Uganda Muslim Medical Bureau	1
Private for profit	3
Private not for profit	2
Bed occupancy (%)	
Less than 30	2
30–50	2
51–70	9
71–100	20
More than 100	6
Not recorded	1

Source of data: a study of 40 hospitals in Uganda in 2010 that implemented a self-assessment checklist of standards for quality of care and working conditions.

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Table 3. Domain scores with selected items

Standards	No compliance	Unsatisfactory compliance	Satisfactory compliance
1. Governance, management and leadership			
Regular outreach programs	—	8	32
Policy for handling vulnerable groups	10	12	18
Mission of hospital is known	2	7	31
Displayed core values in visible areas	16	11	13
Management committee meets weekly	9	10	21
Evidence of audit	2	4	34
Published and disseminated hospital annual report	14	7	19
2. Quality improvement and patient safety			
Minutes of quality assurance filed	14	26	—
Performance indicators for maternal deaths	3	38	—
Quality process indicators are established	11	29	—
3. Physical infrastructure			
Hospital has blood bank	7	3	30
Hospital has tap water	3	3	34
Water adequate for washing hands	1	5	34
Staff accommodation is catered for	8	18	14
Hospital buildings do not leak	6	10	24
Beds are in good repair	2	10	28
Mattresses are in good repair	2	10	28
Surgery is available 24 h a day	5	3	32
Anesthesia is available 24 h a day	6	2	32
Equipment for monitoring patient blood pressure	3	2	35
Provision of inhaled esthetics equipment	2	3	35
Suction is available for resuscitation	—	5	35
4. Human resource management			
Policy and strategy for motivating and retaining staff	9	11	20
Functioning disciplinary committee	5	7	28
Dock in and dock out system	11	8	21
Implementation of CPD	5	12	23
Evidence of a 24 h call rotation	—	2	38
Job performance reviews for physicians	14	3	23
Job performance reviews for nurses	3	6	31
Trainees with supervisor and are supervised	8	3	29
Existence of performance reward system	10	9	14
Work load norms are observed	2	6	32
Evidence of existence of policy and strategy for continuing professional development	10	4	25
Policy and strategy for motivating and retaining staff	1	—	39
5. Clinical services			
Up to date inventory of pharmacy medication	5	5	30

(Continues)

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Table 3. (Continued)

Standards	No compliance	Unsatisfactory compliance	Satisfactory compliance
Drugs kept according to expiration date	2	6	32
Clinical management guidelines for drugs	—	1	39
Integrated management of childhood diseases	—	2	38
Post-partum hemorrhage and management protocol	4	2	34
Mortality audits carried out at least monthly	10	11	19
Weekly clinical audits performed	16	8	16
Infection rates for C/S documented	9	2	29
Ramp or lift for high buildings	4	8	28
Queries desk accessible 24 h a day	17	10	13
Patient surveys is carried out annually	17	8	15
Antenatal care guidelines available	—	18	22
Folic acid available	1	16	23
Availability of pre-test and post-test counseling and HIV testing	—	21	19
Availability of family planning counseling and referral	—	22	18
6. Records and health information management systems			
Policy on management of medical records	2	6	32
Medical records management manual to guide use	2	6	32
Employees who manage medical records	1	0	39
7. Infection control and waste management			
Existence of infection control protocol	1	8	31
Surveillance of needle stick injury	15	6	19
Vermin control	8	11	21
Segregation of waste occurs	2	3	35
Sharps destruction carried out	2	7	31
Incineration on site and functional	10	4	26
CSSD equipment functional	20	7	13
Autoclave	1	39	—
Guidelines meet requirements	5	35	—
Storage of sterile instruments	3	37	—

Source of data: a study of 40 hospitals in Uganda in 2010 that implemented a self-assessment checklist of standards for quality of care and working conditions.
CPD, continuing professional development; C/S, cesarean section; CSSD, Central Sterile Supply Department.

Governance, management and leadership

The strongest performance was noted in this domain. The majority (85%) reported having a recent audit, and they were all conducting at least some sort of outreach program. Twenty-four health facilities had displayed in the open the mission, vision and core values of their health centers. Our survey sample performed poorly on that measure (only one-third did this). Only half published and/or disseminated annual

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hospital reports. In this domain, there was a general sense of lack of adequate documentation and therefore transparency.

Quality improvement and patient safety

In general, the hospitals reported a lack of quality improvement mechanisms. For example, none of the hospitals reported that they track performance indicators that may be associated with maternal deaths. Antenatal care guidelines had been available in just over half the hospitals.

None of the 40 hospitals reported properly filing records of quality assurance meetings or established quality process indicators.

Physical infrastructure

This is perhaps one of the most objective domains to measure; this portion of the survey generated some of the highest scores. Nonetheless, even an 80% compliance with, for example, the item "surgery is available 24 hours per day" meant eight (20%) hospitals fail to meet this measure. Another eight (20%) hospitals failed to have adequate anesthesia available at any time, signaling the inability to offer essential and emergency surgical care. Beds and mattresses were unsatisfactory for 12 (20%.) hospitals. In five hospitals, there were inadequate facilities to take a blood pressure, an indicator of the capacity to monitor vital signs. The lack of accommodation for staff at 26 hospitals (65%) is an indicator of poor working conditions and perhaps inability to attract and retain staff.

While the physical plants were found to meet criteria for satisfactory compliance in a majority of cases, there were 10 or more hospitals reporting inadequate blood banks, poor quality beds, leaking roofs and poor staff accommodation.

Human resource management

The vast majority of hospitals reported compliance with many of the standards in this category. For example, 38 (95%) hospitals reported having a 24-h staff on call system. Three in four reported a performance review system for nurses, and a similar number reported trainees were supervised. Nonetheless, only 14 hospitals reported having an adequate performance reward system, and 17 hospitals reported an inadequate system for reviewing physician performance.

More than half the hospitals noted satisfactory compliance with the standards we portray in this domain.

Clinical services

While almost all hospitals reported having adequate clinical management guidelines for drugs and reported employing a system of integrated management of childhood disease, there are still significant gaps. As many as 10 hospitals were not maintaining up-to-date pharmacy inventories, and 11 were not tracking infection rates even for selected important procedures like cesarean sections.

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Fewer than half are conducting monthly mortality or clinical audits, and one in five struggles to keep drugs according to expiration dates. Two in three fail to maintain an information desk around the clock.

Records and health information management systems

The majority of hospitals reported that they had policies and procedures for medical records management and employed dedicated staff to manage medical records.

Infection control and waste management

The majority of hospitals reported segregating waste (35), destroying sharp waste (31) and having an infection protocol in place (31), but only half was tracking needle stick injuries to staff or vermin control, and only one-third had fully functional Central Sterile Supply Department equipment. Not a single hospital had a fully reliable autoclave or adequate storage for sterile instruments.

DISCUSSION

We set out to refine a set of hospital accreditation standards developed in Uganda and assessed its use in selected hospitals. We received unreserved cooperation from all the hospitals we engaged, and several areas of potential hospital performance improvements were revealed; perhaps this self-assessment approach was a non-threatening approach to performance assessment and also this exercise was motivated by the inherent need to improve how care is delivered in hospitals.

Forty hospitals participated in this exercise. The participating hospitals are representative of the different types of hospitals that exist in Uganda. These included not only district and regional hospitals, operated by the Ministry of Health but also others (non-profit faith-based organization) that are operated by religious bodies of the different faiths in Uganda. The Ministry of Health-operated hospitals serve or are accessed by half of the population that received hospital-based care, and the other half is served by the faith-based hospitals.

Standards for accreditation refine were under seven domains. On governance, management and leadership, we found that there were outreach programs. These outreach programs were a common placed activity in the hospitals. Outreach programs are designed to acquire services nearer (geographical) to the people in need of them. Services moving out to the communities circumvent the barrier of lack of transportation on the part of patients. Outreach programs as a strategy underpins efforts to improve access to essential health services. In addition, half of the hospitals displayed their core values in the open. Strong performing hospitals typically display their mission, vision and core values in visible areas to remind personnel. There is evidence to show that these behaviors inspire personnel to work more effectively and collaboratively (Gabriel and Farmer, 2009; Kofi Darbi, 2012).

Policies catering for specific vulnerable groups such as the physically disabled were missing in more than half the hospitals. This may imply a lack of resources or awareness of the need to make adjustments to cater for albeit a minority but important group of

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people. Such policies would make it mandatory to have infrastructure such as ramps to ease access to buildings.

Even though this survey did not scrutinize the content of the management meetings that took place at the hospitals, the majority met regularly and performed general audits.

Slightly more than half of the hospitals did not publish or disseminate hospital annual reports. In the context of accusations, of rampant corruption in the public sector in Uganda, the lack of widespread publishing and dissemination of annual reports may impact negatively on the quest transparency and accountability in the public service sector.

QUALITY IMPROVEMENT AND PATIENT SAFETY

Whereas there was evidence of regular management meeting and the presence of audits in the governance management and leadership domain. There was a lack of attention to quality improvement mechanisms. Antenatal care guidelines were available in only half of the hospitals. Given the context of the high maternal mortality situation in Uganda (about 310 maternal deaths per 100 000 live births), the importance of quality antenatal services cannot be over emphasized (World Health Organization Global Health Observatory, 2010) strengthening such services contribute to the Millennium Development Goal #5 (World Health Organization).

The absence of specific quality assurance meetings or established quality process indicators suggests the importance of establishing routine hospitals self-assessments. Regular assessments should highlight areas of improvement.

PHYSICAL INFRASTRUCTURE

Physical infrastructure is a critical domain; although it posted the highest satisfactory compliance rates, there were significant non-compliances for critical functions such as the presence of blood banks, availability of staff accommodation and availability of 24/7 anesthesia capacity. The lack of a blood bank impacts on the capacity to handle emergencies that require urgent blood transfusion such as cesarean sections or major trauma from road traffic crashes. The lack of accommodation may impede staff recruitment and retention; no wonder, 24/7 anesthetist cover is a challenge in many of the hospitals that have inadequate accommodation for their staff.

HUMAN RESOURCE MANAGEMENT

Human resource constraint is one of the biggest challenges low-resourced countries have to deal with. Policy to motivate and retain staff was lacking. Job performance reviews were not carried out in all the hospitals. With limited Human Resources for Health (HRH), practices to optimize available personnel are important, and job performance reviews is one of such practices that improve productivity therefore optimizing the available workforce.

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While 32 hospitals claimed workload norms were observed, the system provided no way to check this assertion; previous studies indicate staff may not agree (Hagopian *et al*., 2009; Luboga *et al*., 2011).

CLINICAL SERVICES

Several standards were explored, including tracking of hospital-acquired infections and conducting mortality audits and drug inventories regularly. These are all essential functions that should be implemented in all hospitals. HIV counseling and testing was fully implemented in less than half the hospitals. As reducing HIV transmission and AIDS deaths is another Millennium Development Goal (World Health Organization), to establish universal access to such services is important.

Accreditation (self or external) is likely to inspire improvement because of increased attention to such deficiencies.

A curious finding was that although the population had increased significantly in the last couple of decades, there was no corresponding increase in number of hospitals. Hospital occupancy remains relatively low. In our survey, one-third of the hospitals reported occupancy rates of 70% or lower. Uganda's overall hospital bed availability ranges from 0.2 to 1 per 1000 (Galukande *et al*., 2010). We hope the findings from this paper will prompt a discussion of this under-utilization, its causes and effects.

INFECTION CONTROL

This is a critical function for healthcare facilities; the lack of sterilization services is once again shown in this survey as a major non-compliance. Inadequate capacity to sterilize equipment undermines efforts to control nosocomial infections and have equipment ready in time to execute surgical procedures in an appropriate and timely manner.

Hospital performance assessment methods vary, ranging from simple institutional self-assessments (the method we piloted in this study) to schemes leveraged by being integrated into licensing, payment and public reporting systems. Successful approaches reward performance and enjoy broad-based professional support.

We anticipate that this effort by engaging hospitals in self-assessment exercise will be catalytic to reawakening previous efforts to improve health service delivery through accreditation. Through regular accreditation of hospital services, this approach of self-assessment documents gaps and barriers to quality healthcare delivery (operational weakness); these findings can be used to objectively advocate for more resources on a regular basis.

The existence of hospital accreditation systems in developing countries signals a readiness to tackle significant problems related to quality of care and working conditions. Implementation of a standards program requires staff training to develop an understanding of the standards and assess the degree of compliance. Hospital staff

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will need skills, tools and checklists to track indicators on an ongoing basis. These programs require dedicated funds, government and donor commitment, continual adaptation, ongoing technical assistance to hospitals and a functioning accreditation body (Bukonda *et al*., 2002). Lack of sufficient funds, legal standing and availability of qualified surveyors are challenges met by other developing countries (Saleh *et al*., 2013; Bouchet *et al*., 2002; Bukonda *et al*., 2002) and are likely to be similar to the Ugandan case.

To sustain accreditation processes, both public and private hospitals need incentives to participate. Governing bodies have financial leverage or licensing leverage to require facilities to provide safe, quality and cost-effective care for patients. In the private sector, rewards are ideally reaped in the market, as public image and reputation may accompany accreditation. Healthcare insurance schemes, both public and private, can reward accreditation with reimbursement formulae.

The presence of a strong consumer voice can prompt participation in accreditation programs, as communities can generate political pressure to induce regulation (Peters and Muraleedharan, 2008). For example, Uganda's Ministry of Health has launched an anonymous hotline, M-Trac, which provides free SMS (texting) so people can respond to polls and notify the Ministry of irregularities. The system was especially aimed at detecting drug shortages (which have been linked to corruption). The Ministry's 3-year-old Health Service Delivery Monitoring Unit receives the reports. As of July 2012, more than 130 000 Ugandans were signed up (UNICEF, 2012). Media accounts of these efforts have been lively (Croome, 2011).

There is evidence of Uganda's Ministry of Health's commitment to accreditation. The Ministry's strategic plan states, "The National Hospital Policy calls for the establishment of an independent accreditation body which will be responsible for accrediting hospitals to ensure there is compliance with standards of best practice" (Government of Uganda Ministry of Health, ; Ministry of Health, 2013). Further, a "Request for Expression of Interest" was issued on 1 March 2012 seeking "consultancy services for awareness creation for a national hospital accreditation system in Uganda." After considering responses, the proposal by one of the authors of this paper (S. L.) was accepted for procurement.

In general, the findings in this survey were similar or in some cases improved (e.g., use of clinical guidelines or functioning sterilization equipment) compared with findings in 2007 in the Uganda Service Provision Assessment Survey (Ministry of Health and Macro International Inc., 2008). Regular surveys are an essential component of continuous quality improvement. The findings in these two surveys underscore the need for a regular survey process to be implemented in Uganda.

While widely accepted and intuitively satisfying as an approach to improve patient care quality, there is remarkably limited evidence on endorsing the effectiveness of standards in improving quality and perhaps patient outcomes (Saleh *et al*., 2013; Flodgren *et al*., 2011; Linegar *et al*., 2012; Griffith *et al*., 2002; Miller *et al*., 2005). On the other hand, in order to improve service delivery performance, simultaneous action on several fronts is required; new delivery models to increase access and the introduction of performance incentives (Bryan *et al*., 2010) accreditation standards being one.

This study used a tool that was piloted and extensively discussed, scrutinized to ensure validity, refereeing to how well a measure purported to be measured is

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measured and reliability referring to the degree to which the tool produced stable and consistent results.

LIMITATIONS

Our findings reflect self-reported data generated by the officer(s) we found in charge of the hospitals on the days we arrived. Self-reported assessments lack certain objectivity; nonetheless, the remarkable number of problems was uncovered. Had we included the 20 hospitals that chose not to participate, the results would likely have changed. Further, despite on-site training, we expect there was inconsistency in results owing to variable perceptions of what situations met standards. These scores also lack benchmarks as a reference for judgment.

CONCLUSIONS

We have demonstrated it is feasible to utilize a self-assessment approach to hospital standards in low-income country settings such as Uganda. This low-cost approach proved to be a good precursor to establishing a national accreditation body, as indicated by the Ministry's efforts to take the next steps.

It is important for academics, especially in cross-country collaborations, to inform these processes with evidence, as part of the evolving field of implementation science (Heidari *et al*., 2011). Further, university-affiliated faculties are motivated to publish their findings, making new knowledge available to the public. This distinguishes academics from charitable non-government organizations.

Donors, too, have a role to play in improving hospitals in low-income settings. A lesson learned from the "Yellow Star" program was that programs must be owned by the Ministry of Health, even if supplemented with funding from donor sources. Ministries, of course, make themselves more attractive to donors when they embrace systems of accountability such as stakeholders' involvement "model". Further, accreditation can point to specific domains that are in particular need of infusions of donor support.

Finally, a self-assessment checklist communicates hospital managers the parameters and indicators that matter for quality assurance. Standards form an organized framework and can be sorted by spheres of influence, the costs required to bring to standard or the areas of interest to donors. It is time for Uganda to move forward to adopt standards, identify an accrediting authority and establish a formal, independent accreditation program.

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CONFLICT OF INTEREST

The authors have declared they have no competing interests.

AUTHOR CONTRIBUTIONS

SB drafted the first set of standards. S. L., S. B., A. H., M. B. and M. G. led the stakeholders meeting. M. G., A. K., R. B. and S. L. participated in field testing the accreditation instrument. G. M. wrote the first draft, and A. H. made significant revisions. All authors participated in data analysis and reviewed the several drafts for intellectual content.

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