Improving Quality Management Systems of Laboratories in Developing Countries

An Innovative Training Approach to Accelerate Laboratory Accreditation

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Key Words: Accreditation; Management; Laboratory quality management system; Laboratory management; Task-based training

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Abstract

The Strengthening Laboratory Management Toward Accreditation (SLMTA) program was developed to promote immediate, measurable improvement in laboratories of developing countries. The laboratory management framework, a tool that prescribes managerial job tasks, forms the basis of the hands-on, activity-based curriculum. SLMTA is implemented through multiple workshops with intervening site visits to support improvement projects. To evaluate the effectiveness of SLMTA, the laboratory accreditation checklist was developed and subsequently adopted by the World Health Organization Regional Office for Africa (WHO AFRO). The SLMTA program and the implementation model were validated through a pilot in Uganda. SLMTA yielded observable, measurable results in the laboratories and improved patient flow and turnaround time in a laboratory simulation. The laboratory staff members were empowered to improve their own laboratories by using existing resources, communicate with clinicians and hospital administrators, and advocate for system strengthening. The SLMTA program supports laboratories by improving management and building preparedness for accreditation.

The fight against the HIV/AIDS epidemics in resource-limited countries, particularly in sub-Saharan Africa, has benefited from the recent global funding surge, primarily from the US President’s Emergency Plan for AIDS Relief; the Global Fund for AIDS, Tuberculosis and Malaria; UNITAID; the World Bank; and other donors. The United States spends an estimated $10 billion per year on scaling up HIV/AIDS prevention, care, and treatment programs.1,2 However, rapid program expansion has accentuated a problem that has long plagued the health system and undermined the program goals—weak laboratory services, dilapidated laboratory infrastructures, and nonfunctioning laboratory networks.3,4 Globally strengthening laboratory systems, infrastructure, and personnel is necessary to achieve universal access to care and treatment.4-6

With the surge in program funding, investment in laboratory training has also increased. However, the funding for laboratory management training appears limited. Furthermore, educating policy makers about the benefits of strong laboratory networks, thereby garnering support for laboratories, although crucial, is almost nonexistent. Laboratory staff tend to be promoted to supervisory and higher management positions on the basis of seniority or technical expertise, not management skills. Skills required to effectively manage a laboratory include using resources to efficiently meet service goals, supervising and motivating staff, initiating change, and managing relationships with patients and clinicians.7 Management training is essential to enable laboratory managers to systematically improve their laboratories, provide quality services with limited resources, and achieve accreditation.
Although some effective management training programs exist, many times training alone does not lead to observable changes in laboratory practice. Ineffectiveness of workshops may relate to the curriculum content and a lack of follow-up. Often, the curriculum content is theory-dense and based on generic management topics such as leadership, motivation, team building, and problem solving. Trainees may have difficulty applying the theories in their daily work.

The Centers for Disease Control and Prevention (CDC) and World Health Organization (WHO) Regional Office for Africa (AFRO), in partnership with the American Society for Clinical Pathology (ASCP) and the Clinton Foundation, developed Strengthening Laboratory Management Toward Accreditation (SLMTA) to provide an alternative approach to the training of laboratory management and quality management systems. In this article, we describe the development of a tool kit designed to guide laboratories toward the recently launched WHO AFRO Laboratory Accreditation through performance of daily management tasks and routines. We also describe the results from pilot testing in Uganda.

Methods

Task-Based Laboratory Management Framework

The framework defines management in terms of laboratory-specific job tasks performed by managers. It operates under the assumption that effective training is prescriptive, not just descriptive. Instead of describing laboratory management (for example, “5 traits of an effective leader”), training must be grounded in job tasks and job routines such as “This is what you do to manage a laboratory effectively.” The framework was the product of a consensus by several organizations including the ASCP, Clinton Foundation, Association of Public Health Laboratories, American Society for Microbiology, Clinical and Laboratory Standards Institute, and Becton Dickinson.

The components of the framework formed the backbone of the SLMTA curriculum and guided the development of the WHO AFRO Laboratory Accreditation Checklist.

This framework Table I is organized into 4 levels of laboratories in a tiered health system. The 4 levels and the tasks performed by managers are as follows: (1) National level—system strengthening tasks: Managers are responsible for the entire country’s laboratory policy, infrastructure, and operations. They provide oversight to specialized reference laboratories. Their key responsibility is to create and execute a multiyear laboratory strategic plan for the country. On a daily basis, they monitor implementation of the plan and troubleshoot issues. (2) Regional/provincial level—supervisory and mentoring tasks: Managers supervise specialized laboratories and departments and perform specialized testing. (3) District level—laboratory operations tasks: The managers are generalists. They manage laboratories within their own institutions. (4) Community level—basic laboratory operations tasks: A trained laboratory technician may manage the site under supervision from other medical staff.

At each level of laboratory service described, the framework provides guidelines for managing laboratories at that level, including job tasks, management routines, and job aids and tools. Job tasks answer the question, “What does a manager do?” These tasks are arranged into key areas of work. Desired outcomes associated with each area of work are also defined Table II. Management routines specify when and how often each task is performed. Job aids and tools define how a task should be performed.

The assessment checklist was designed to quantitatively define the situation in the laboratory in terms of observable, measurable results. It can be used for assessment during supervisory visits, planning and evaluating laboratory improvement projects, and assessing training effectiveness. The checklist, subsequently adopted as the checklist for the WHO AFRO Laboratory Accreditation scheme, now provides a roadmap for laboratories moving toward accreditation.

**Table I**

<table>
<thead>
<tr>
<th>Task-Based Laboratory Management Framework</th>
</tr>
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<tbody>
<tr>
<td>National</td>
</tr>
<tr>
<td>Job task list (what do you do?)</td>
</tr>
<tr>
<td>Management routines (when do you do it?)</td>
</tr>
<tr>
<td>Job aids and management tools (how do you do it?)</td>
</tr>
<tr>
<td>National laboratory assessment checklist (observable results)</td>
</tr>
</tbody>
</table>
The validity and applicability of the framework were field tested in Ethiopia and Uganda by interviewing 22 laboratory managers from all 4 levels. The field test resulted in only minor edits to the framework. However, as it is unrealistic to expect 1 framework to accurately reflect every country’s laboratory system, it is presumed that the framework will require some country-specific customization. Nevertheless, this framework presents a comprehensive picture of what laboratory management entails.

SLMTA: A Task-Based Training and Mentoring Tool Kit

The tool kit is a unique feature of SLMTA and includes the task-based framework, the interactive curriculum, and the checklist. The implementation model of multiple workshops with intervening site visits is an equally essential part of the training program. This tool kit may be used for on-site mentoring in addition to classroom training. Individual activities or tools may be selected based on identified gaps.

The foundation of the tool kit is the laboratory operations (district-level) tasks of the framework. These tasks embody the fundamental requirements to manage a quality laboratory, irrespective of the level of the laboratory. The 10 modules in the SLMTA tool kit correspond to the 10 key areas of work in the framework Figure 1. The desired outcome of each area is the performance outcome of the module. The tasks become the learning objectives for the corresponding module. Each module contains activities designed to teach the job tasks. There are more than 40 activities in this tool kit, with a total delivery time greater than 50 hours. All of the activities are interactive and participatory, with less than 10% of total classroom time devoted to lecture. The curriculum also incorporates quality improvement tools such as process mapping, data monitoring, and Lean principles and methods (using less to do more by reducing waste in work processes) for laboratories.

The same laboratory management tasks that guided the design of the training activities also formed the basis of the WHO AFRO Laboratory Accreditation Checklist, which is consistent with ISO 15189. As a result, participants see a clear link between a task they are learning and the corresponding checklist items. Each activity references the framework tasks and checklist items that it is designed to fulfill Table 3.

Multiworkshop Implementation Model

The implementation process is crucial to the success of the program. The model uses a series of short training sessions delivered in a 6- to 12-month period. Between sessions, active learning continues with laboratory improvement projects and supportive site visits. Because behavioral changes take time, implementing multiple workshops allows the changes to be planned, monitored, and sustained. This model also allows facilitators to assess the effectiveness of training and address any observed misconceptions or gaps in the next workshop or site visit.

An emphasis on action sets this program apart from other workshops. Participants are assigned laboratory improvement projects, the benefits of which have been reported. The improvement projects are assigned based on the content covered in training and the identified gaps from the baseline assessment. Intensive coaching on project planning increases the chances for success, as do timely follow-up visits to monitor project implementation.

Site visits provide the link between the classroom curriculum and the participant’s home laboratory. These visits affirm and reinforce continuous performance of good laboratory practices. Between the training sessions, facilitators or mentors visit participants’ laboratories to provide in-depth

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coaching for site-specific problems, evaluate the effectiveness of training, identify common gaps to shape the focus of the next training sessions, and assess the progress of improvement projects. In subsequent workshops, participants report results of their improvement projects and share lessons learned. These reporting sessions foster accountability, allow participants to learn from each other, and facilitate the formation of a peer-support learning network, a key tenant in improvement collaboratives.

The SLMTA tool kit provides a comprehensive foundation to effect immediate behavioral changes and laboratory improvement. However, additional training, mentoring, and ongoing support are necessary to achieve sustainable improvement leading to laboratory accreditation. Additional content or mentoring may be needed in the areas of quality control, biologic safety, quality management systems, writing standard operating procedures, and method validation.

Results

Uganda Pilot Testing

The goal of pilot testing was to assess the efficacy of the SLMTA program, specifically the task-based approach and

<table>
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<tr>
<th>Table 2</th>
<th>Job Task List for District Level Laboratories</th>
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<tbody>
<tr>
<td>Key Areas of Work</td>
<td>Desired Outcome</td>
</tr>
<tr>
<td>1. Productivity management</td>
<td>• Efficient work flow • Evenly distributed workload • Uninterrupted service delivery</td>
</tr>
<tr>
<td>2. Work area management</td>
<td>Clean, adequate, safe, and functional equipment, work space, and storage area</td>
</tr>
<tr>
<td>3. Inventory management</td>
<td>• No overstocking • No understocking • No stock-out</td>
</tr>
<tr>
<td>4. Procurement management</td>
<td>Fresh supplies always available for continuous service</td>
</tr>
<tr>
<td>5. Routine/preventive maintenance of equipment</td>
<td>Equipment functioning all the time to ensure uninterrupted and quality service</td>
</tr>
</tbody>
</table>

QC, quality control; SOPs, standard operating procedures.
### Table 3
**Example of the Relationship Among Tasks, Training Activities, and Checklist Items**

<table>
<thead>
<tr>
<th>Key Areas of Work</th>
<th>Desired Outcome</th>
<th>Tasks (What do they do?)</th>
</tr>
</thead>
</table>
| 6. Quality assurance | Consistently accurate and reliable test process (preanalytical, analytical, postanalytical) | 5.4 Review and sign maintenance logs to ensure regular preventive maintenance and timely repairs  
5.5 Take corrective actions or issue repair orders and record all issues  
5.6 Follow-up on all corrective actions; determine if equipment is properly functioning; observe for trends, or determine training needs  
5.7 Communicate to upper management equipment specifications and maintenance needs  
6.1 Ensure that the quality manual with quality assurance policies and procedures is accessible to and reviewed by all staff  
6.2 Ensure that QC material is tested according to SOPs  
6.3 Establish acceptable ranges for control material  
6.4 Validate new equipment, reagents, and supplies  
6.5 Track test performance (eg, Levy-Jennings chart) for trends  
6.6 Review discordant rates, and determine appropriate action  
6.7 Review records of environmental checks and QC trends to assess impact on testing, and take corrective action  
6.8 Review occurrence log for patterns/trends, and take corrective action  
6.9 Monitor reagent performance  
6.10 Customize site-specific SOPs as needed  
6.11 Ensure that SOPs are read and understood by staff  
6.12 Enroll in external quality assessment program, postanalytical  
6.13 Periodically observe/assess accuracy of work of personnel, and take corrective action  
7.1 Determine appropriate tests based on test request and assign test responsibility  
7.2 Review specimen log for completeness  
7.3 Enforce good specimen handling and processing practices  
7.4 Ensure adherence to specimen referral requirements  
7.5 Track specimen referral status, and review referral reports to ensure timely return of test results |
| 7. Specimen collection and processing | Proper specimen collection, labeling, packaging, storage, tracking, and disposal | 5.4 Review and sign maintenance logs to ensure regular preventive maintenance and timely repairs  
5.5 Take corrective actions or issue repair orders and record all issues  
5.6 Follow-up on all corrective actions; determine if equipment is properly functioning; observe for trends, or determine training needs  
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7.3 Enforce good specimen handling and processing practices  
7.4 Ensure adherence to specimen referral requirements  
7.5 Track specimen referral status, and review referral reports to ensure timely return of test results |
| 8. Laboratory testing | All laboratory tests performed promptly and accurately; test results validated and recorded before release | 5.4 Review and sign maintenance logs to ensure regular preventive maintenance and timely repairs  
5.5 Take corrective actions or issue repair orders and record all issues  
5.6 Follow-up on all corrective actions; determine if equipment is properly functioning; observe for trends, or determine training needs  
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7.3 Enforce good specimen handling and processing practices  
7.4 Ensure adherence to specimen referral requirements  
7.5 Track specimen referral status, and review referral reports to ensure timely return of test results |
| 9. Test result reporting | Reporting of accurate test results and findings within established turnaround time; satisfied clients | 5.4 Review and sign maintenance logs to ensure regular preventive maintenance and timely repairs  
5.5 Take corrective actions or issue repair orders and record all issues  
5.6 Follow-up on all corrective actions; determine if equipment is properly functioning; observe for trends, or determine training needs  
5.7 Communicate to upper management equipment specifications and maintenance needs  
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7.3 Enforce good specimen handling and processing practices  
7.4 Ensure adherence to specimen referral requirements  
7.5 Track specimen referral status, and review referral reports to ensure timely return of test results |
| 10. Documents and records management | Permanent, secure, and traceable records and approved, up-to-date, and easily accessible documents | 5.4 Review and sign maintenance logs to ensure regular preventive maintenance and timely repairs  
5.5 Take corrective actions or issue repair orders and record all issues  
5.6 Follow-up on all corrective actions; determine if equipment is properly functioning; observe for trends, or determine training needs  
5.7 Communicate to upper management equipment specifications and maintenance needs  
6.1 Ensure that the quality manual with quality assurance policies and procedures is accessible to and reviewed by all staff  
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* Section 12 of the World Health Organization Regional Office for Africa checklist assesses facilities and safety.
multiworkshop delivery model, capture lessons learned, refine the curriculum, and guide future program rollout. Pilot participants were 17 staff members from 15 laboratories in 7 districts, including 2 laboratory assistants, 6 laboratory technicians, 5 laboratory technologists, and 4 district laboratory focal persons. No attendees held the title of laboratory manager because the position does not exist in Uganda’s health care system. Learners came from health center IV and district hospital laboratories. All 17 participants completed the pilot series.

Pilot Structure

The pilot included a series of 3 workshops conducted by CDC and ASCP facilitators. Each workshop spanned 3 days, separated by 3- or 4-month intervals. Participants implemented assigned improvement projects after each workshop. The Uganda National Laboratory training team was responsible for conducting the follow-up site visits. Some laboratories also received a second visit by the Ugandan team and the CDC-ASCP facilitators. A laboratory assessment tool was used to record the findings for each visit.

Discussion

Participants, who were actively engaged throughout the training, welcomed the practical, task-based approach. The improvement projects—by jumpstarting change from the laboratories’ current stage—led participants to believe that they could make a difference despite systemic challenges and limited resources.

Outcomes of the pilot were measured in terms of laboratory improvements achieved, rather than written test scores. This pilot demonstrated that when improvement projects were done properly, laboratories were able to achieve immediate and tangible laboratory improvement even without major policy intervention or resource reallocation. Through site visits, facilitators observed improvement in storerooms, workbenches, and the sample flow. A laboratory purchased a new waste bin to allow for separation of waste; another purchased thermometers to monitor the temperatures in refrigerators and freezers. One participant met with upper management regarding the removal of a nonfunctioning refrigerator, thereby freeing up space critically needed for testing. Increased communication, among laboratory staff and between laboratory staff and hospital administration, was also reported.

In response to clinic administration’s concerns about timely delivery of client results, the National STD (Sexually

<table>
<thead>
<tr>
<th>Table 4i</th>
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<tbody>
<tr>
<td><strong>Uganda Pilot Series</strong></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Workshop No. and Time</th>
<th>1, August 2008</th>
<th>2, November 2008</th>
<th>3, March 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workshop content</td>
<td>Laboratory management framework</td>
<td>Reporting of improvement projects</td>
<td>Reporting of improvement projects</td>
</tr>
<tr>
<td></td>
<td>Discussion of baseline assessment results</td>
<td>Cross-cutting</td>
<td>Cross-cutting</td>
</tr>
<tr>
<td></td>
<td>Productivity management</td>
<td>Work area management</td>
<td>Equipment maintenance</td>
</tr>
<tr>
<td></td>
<td>Improvement project planning</td>
<td>Inventory management</td>
<td>Quality assurance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Procurement management</td>
<td>Laboratory testing</td>
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<tr>
<td></td>
<td></td>
<td>Specimen management</td>
<td>Test result reporting</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improvement project planning</td>
<td>Documents and records management</td>
</tr>
<tr>
<td>Postworkshop improvement projects</td>
<td>Implement redesigned floor plan/specimen flow</td>
<td>Measure turnaround time of 1 test</td>
<td>Improvement project planning</td>
</tr>
<tr>
<td></td>
<td>Create/implement a duty roster</td>
<td></td>
<td>Simulation</td>
</tr>
<tr>
<td></td>
<td>An improvement project of your choice</td>
<td>Perform safety audit, and improve 1 deficiency</td>
<td>Reorganize workstation to increase efficiency</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Plan, develop, and assess customer satisfaction</td>
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<table>
<thead>
<tr>
<th>Table 5i</th>
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<tbody>
<tr>
<td><strong>Sample Improvement Project Results in Laboratories in Uganda</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Laboratory</th>
<th>Problem</th>
<th>Improvement Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kawolo Hospital, Mukono</td>
<td>Stock-outs, caused by outdated stock cards and disorganized storeroom</td>
<td>Organizing storeroom</td>
</tr>
<tr>
<td>Nkozi Hospital, Mpigi</td>
<td>Loss of data because results were not recorded immediately in log books or result slips were taken before they were recorded</td>
<td>Improving data collection</td>
</tr>
<tr>
<td>Sexually Transmitted Infections Clinic, Mulago</td>
<td>Uneven distribution of workload among staff; staff members started work anywhere they wanted; laboratory manager performed most of the work to cover work left unfinished by others</td>
<td>Implementing a duty roster</td>
</tr>
</tbody>
</table>
Transmitted Disease) Clinic Laboratory in Kampala adopted turnaround time (TAT) for rapid HIV testing as its improvement project. The laboratory measured and recorded results on 1 day each week for 4 weeks. At the conclusion of the measurement period, the laboratory established that the TAT for rapid HIV testing was within 1 hour. The data confirmed that the laboratory was delivering timely services. This left clinic administration to assess other processes within the clinic to improve result reporting. In addition, the use of data to improve patient care was promoted throughout the clinic.

The staff meeting activity incorporates the generic managerial concepts of communication and teamwork into a laboratory-specific, practical learning exercise. On returning to their respective laboratories, many of the participants instituted staff meetings to communicate the lessons learned and foster continuous improvement of laboratory services. One participant reported how malaria smear TAT was improved significantly as a result of meeting with, listening to, and coordinating efforts of the staff.

Additional training outcomes were demonstrated in a final laboratory simulation exercise. In the phase I simulated laboratory scenario, chaos reigned. At the end of 34 minutes, the samples for 14 patients had been processed with an average TAT of 8.5 minutes. The participants were anxious to implement newly learned tools to improve the laboratory in phase II of the simulation. Working in teams, they redesigned the layout, streamlined the processes, organized inventory, specified tasks at each workstation, assigned personnel according to workload, and maintained equipment. Phase II showed noticeable improvement with an increased number of samples processed (from 14 to 34 samples), despite a shortened run time (21 vs 34 minutes). In addition, the average TAT decreased from 8.52 to 5.30 minutes. As several participants pointed out, they achieved these results without additional funding, staff, or laboratory space.

Besides the observed behavioral changes and laboratory improvements, participants also reported feeling more confident and empowered as laboratory managers. At the outset of the pilot, a sense of helplessness, owing to lack of resources and lack of decision-making power, was prevalent among participants. By the end of the pilot, that sentiment had changed. They now realized they could begin immediately to improve their laboratories without additional resources or outside help. The sense of empowerment extended to interaction with the other members of the health care team.

Similarly, the benefits of the multiworkshop implementation model were well demonstrated in the pilot. For example, it took several iterations of the duty roster activity combined with the testimony from other laboratory staff to convince some participants of the benefits of assigning specific tasks and workstations to the staff. In addition, common deficiencies found during site visits often led the facilitators to revise planned training activities or create new ones. Noting several disorganized phlebotomy workstations prompted the creation of a new workstation set-up activity. Furthermore, photographs captured during site visits provided powerful teaching tools, allowing participants to critically review and assess their own and each other’s laboratories.

**Challenges**

Despite promising pilot results, this program faces several challenges for implementation and spread. This approach to training has a higher cost per participant compared with other in-service courses owing to the multiworkshop format and required supervisory visits. Some of the improvement project results could not be verified during
supervisory visits, and other projects were not sustained. Behavioral change requires time, motivation, and consistent support. This highlights the importance of continuous senior management involvement and the need to hold trainees accountable for demonstrating training results. Setting explicit requirements for successful course completion from the outset is beneficial.

The WHO AFRO Accreditation Checklist, alpha version, was field-tested in 4 laboratories, while Uganda’s standard national supervision checklist was used on all other visits. It would be ideal if the same checklist was used to enable before-and-after comparisons.

The pilot provided a proof of concept. However, turning the pilot into a sustainable process requires investment in human resources so that current laboratory personnel are not overwhelmed with the additional workload.

Conclusions and Recommendations

The Uganda pilot demonstrated learning transfer and behavioral changes in the laboratory from the practical, task-based training approach. The multiworkshop delivery model with improvement projects and site visits, although challenging, was implemented successfully with immediate and tangible outcomes. SLMTA embodies several unique features:

- The curriculum teaches specific tasks performed by laboratory managers on a daily basis rather than generic information.
- SLMTA is uniquely positioned to guide laboratories toward WHO AFRO accreditation. There is a clear link between the tasks learned and the corresponding item on the Laboratory Accreditation Checklist. In addition, the checklist serves as the ultimate tool to evaluate the effectiveness of the training.
- The implementation model with improvement projects and site visits is essential to the program’s success.

Although it has been demonstrated that a level of laboratory improvement is achievable without major interventions from outside, political support, national policy, intact laboratory networks, and adequate resources are essential to complement and sustain the improvement and achieve a higher level of quality patient care. Top-down and bottom-up strategies must be coordinated and linked to support sustained improvement and progress toward accreditation.

Owing to the strong linkage between SLMTA and the WHO AFRO Laboratory Accreditation Checklist, this program is well positioned to support laboratories to accelerate the process toward accreditation by WHO AFRO. To achieve that goal, we recommend the following:

1. Setting prerequisites for entry into the program ensures laboratories are ready to embark on the accreditation process. Criteria may include availability of a country national laboratory strategic plan and policy, a laboratory director with decision-making power, a quality assurance manager, and participants committed to the same job responsibilities throughout the program time frame.

2. A baseline assessment of the selected facilities should be conducted using the WHO AFRO Laboratory Accreditation Checklist at the start of the program to determine gaps and guide development of an action plan. This plan will need to outline a strategy to close the gaps, including additional training, technical assistance, or mentoring programs to complement the SLMTA program. Areas for accreditation that are not addressed in depth by SLMTA include quality control principles and practices, writing standard operating procedures, biologic safety, and quality assurance manager training.

3. Implementation of the multiworkshop delivery model, with improvement projects and on-site monitoring

<table>
<thead>
<tr>
<th>SLMTA Curriculum Compared With a Generalized Management Course</th>
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<tbody>
<tr>
<td><strong>SLMTA</strong></td>
</tr>
<tr>
<td>Structure</td>
</tr>
<tr>
<td>Course design</td>
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<tr>
<td>Teaching method</td>
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<tr>
<td>Course evaluation</td>
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<tr>
<td>Immediate course outcomes</td>
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SLMTA, Strengthening Laboratory Management Toward Accreditation.
and support, requires strong and ongoing support from ministries of health and in-country partners. Resources must be allocated, and visits must be planned in advance, not as an afterthought.

4. At the end of the SLMTA training series, another assessment should be done using the checklist. The difference in scores between the baseline and the end-of-program assessment is a measure of the training impact.

5. Because of SLMTA’s unique training approach and unconventional delivery model, trainers and implementers of the program should undergo a training-of-trainers or training-of-mentors program to ensure that SLMTA reaches its full impact. SLMTA trainers in the full-time employ of a ministry of health or a nongovernment organization will need dedicated time to prepare and implement training and conduct site visits.

From the 1Centers for Disease Control and Prevention, Atlanta, GA; 2American Society for Clinical Pathology, Chicago, IL; 3Clinton Foundation, New York, NY; 4Centers for Disease Control and Prevention, Uganda Office, and 5Ministry of Health, Kampala, Uganda.

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References