SLIPTA 2.0: Taking Laboratory Quality Assessment to a Higher Level Using an Electronic Checklist

The Stepwise Laboratory Quality Improvement Process Towards Accreditation (SLIPTA) checklist is a laboratory audit tool developed by the World Health Organization, Regional Office for Africa (WHO-AFRO) to evaluate progress towards international accreditation. Breaking laboratory assessment into 12 quality management system (QMS) essential elements (See Figure 1), the SLIPTA checklist scores laboratories using points and percentage of the maximum possible score, rating laboratories on a scale of zero to five stars with the goal that laboratory star rankings will increase progressively as quality improvement projects are implemented.

SLIPTA 2.0 is the latest version of the tool and has been aligned to the international standard for medical laboratories, ISO 15189:2012. SLIPTA 2.0 simplifies laboratory policy and process development by breaking down components of the full international standard into manageable QMS components, facilitating laboratory progress toward international laboratory accreditation in a stepwise manner.

We asked GSSHealth Lead Technical Specialist Martin Adams to discuss the benefits of SLIPTA to laboratory quality improvement and to explain how the development of an easy-to-use Excel version of the tool has impacted laboratory professionals working towards accreditation.

SLIPTA scores

Score, % 0% 83%

Parameter	Audit	Site 1	Site 2	Site 3
Purchasing and Inventory	Baseline	20%	29%	46%
	1st follow-up	83%	33%	58%
Process Control, IQC & EQA	Baseline	21%	28%	33%
	1st follow-up	30%	37%	47%
Organization & Personnel	Baseline	10%	23%	45%
	1st follow-up	50%	41%	50%
Occurrence MGMT & Proces..	Baseline	0%	0%	0%
	1st follow-up	25%	33%	50%
MGMT Reviews	Baseline	6%	7%	14%
	1st follow-up	50%	57%	36%
Internal Audit	Baseline	0%	27%	0%
	1st follow-up	7%	53%	53%
Information MGMT	Baseline	28%	14%	53%
	1st follow-up	47%	47%	67%
Facilities and Safety	Baseline	12%	35%	26%
	1st follow-up	63%	77%	53%
Equipment	Baseline	23%	17%	26%
	1st follow-up	57%	46%	66%
Documents and Records	Baseline	8%	21%	14%
	1st follow-up	54%	29%	21%
Customer Service	Baseline	0%	30%	14%
	1st follow-up	50%	40%	21%
Corrective Action	Baseline	8%	0%	0%
	1st follow-up	26%	42%	42%
Total	Baseline	14%	21%	25%
	1st follow-up	49%	46%	48%
		0% 50% 100% Score, %	0% 50% 100% Score, %	0% 50% 100% Score, %

*Figure 1. Examples of scoring data for SLIPTA evaluations conducted in three sites, broken down by SLIPTA section.**

"The SLIPTA e-tool has made the evaluation process easier by reducing workload, paperwork and results turnaround time," says Martin Adams, who has created an Excel-based electronic checklist for SLIPTA Version 2.0. It also facilitates data analysis and use, rendering internal audits more feasible and less daunting for laboratory personnel who already have busy schedules.

"The e-tool benefits individual evaluators and laboratories, but also has the potential to facilitate a significant expansion of internal audits and quality activities to diverse laboraotry sites, some of which are relatively inaccessible to international teams," continues Adams. "Plus, the use of a consistent tool has allowed for temporal and spatial analysis of trends and data, useful for both reporting metrics and project planning."

The SLIPTA e-tool includes an automatic scoring system and a section visualizing SLIPTA results of current and previous evaluations on a spider chart (See Figure 2). The e-tool's inclusion of a summary tab for laboratory policies and a SLIPTA question summary tab has provided an added benefit of allowing laboratory personnel to quickly pinpoint key strengths and areas for improvement (See Figure 3). Furthermore, the SLIPTA e-tool does not require special software or internet access during audits, rendering it accessible to a wide range of users.

Since 2015, 14 Ministry of Defense (MOD) diagnostic laboratories in five West and Central African countries have harnessed the power of the V2.0 SLIPTA e-tool. As part of a project funded by the US Department of Defense and supported by GSSHealth, laboratories conduct internal audits and frame improvement projects around audit findings. Under the

auspices of the Global Health Security Agenda (GHSA), the Ministry of Health (MOH) of Togo, with assistance from CDC and GSSHealth, has performed audits at over 80 laboratories across the county, launching a massive mentorship program to raise standards at all levels of the tiered healthcare system. Additionally, via the GSSHealth website, the tool has been shared with over 20 organizations across Africa, Asia and the Caribbean.

eTool based on WHO Stepwise Laboratory Quality Improvement Process Towards Accreditation (SLIPTA) Checklist Version 2:2015

		Current Audit		Select a previous audit for comparison	Previous Audit	
		Audit date:	28-Dec-17		Baseline Audit	
					Audit Date:	15-Nov-16
Audit maximum score		Audit score	Current Percentage	Change	Previous audit score	Previous audit percentage
28		9	32%	15%	5	0.17
14		9	64%	57%	1	0.07
22		13	59%	27%	7	0.32
10		9	90%	60%	3	0.3
35		24	69%	52%	6	0.17
15		1	7%	-6%	2	0.13
24		11	46%	21%	6	0.25
30	*	18	60%	32%	9	0.28
15	*	9	60%	17%	9	0.43
19		4	21%	16%	1	0.05
12		10	83%	71%	1	0.12
43		27	63%	17%	20	0.46
267	*	**144**	**54%**		68	0.25

* shown if any audit category is outside of standard maximum score due to answers being marked N/A

Current Audit		Previous Audit
54%	Percentage Score	25%
0 star	Star Rating	0 star

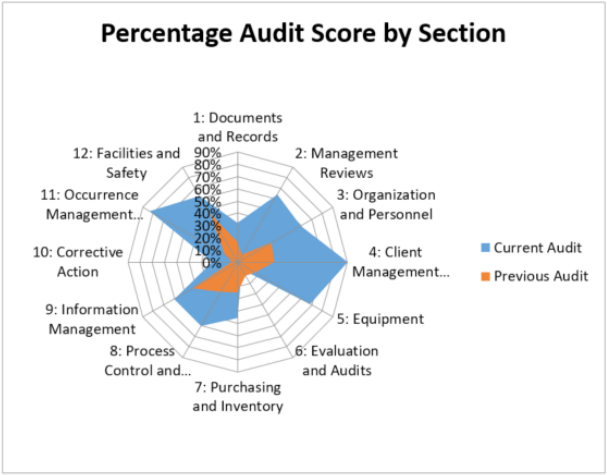

*Figure 2. Screenshot of the summary tab of the SLIPTA e-tool showing baseline and follow-up internal audit results.**

Question number	Question	Answer	Score	
		Documents and Records		
1.1	Does the laboratory have documentation stating its legal identity?	Yes	2	2 certifica
1.2	Is there a current laboratory quality manual composed of the quality management system's policies and procedures; has the manual content been communicated to staff, and is the manual understood and implemented by all staff?	Partial	1	
1.3	Does the laboratory have a system in place to control all documents and information (internal and external sources)?	Partial	1	
1.4	Is there a list that details all documents used in the quality management system indicating their editions and distribution?	Yes	2	
1.5	Are policies and/or standard operating procedures (SOPs) for laboratory functions, technical and managerial procedures current, available and approved by authorized personnel?	Partial	1	
1.6	Are policies and SOPs easily accessible/ available to all staff and written in a language commonly understood by respective staff?	Partial	1	
1.7	Is there documented evidence that all relevant policies and SOPs have been communicated to and are understood and implemented by all staff as related to their	No	0	
1.8	Are policies and procedures dated to reflect when it was put into effect, its location, when it was reviewed and when it was discontinued?	No	0	
1.9	Are invalid or discontinued policies and procedures clearly marked / identified and removed from use and one copy retained for reference purposes?	No	0	
1.10	Are test results, technical and quality records, invalid or discontinued policies and procedures archived for a specified time period in accordance with national/international guidelines?	No	0	

Policies Summary (from Question 1.5)

Do the following policies exist?	Response
Ethical Conduct	Yes
Document Control	Yes
Control of Records	Partial
Communication (internal and external)	No
Service Agreements	Partial
Examination by Referral Laboratories and Consultants	N/A
External Services and Suppliers	Yes
Purchasing and Inventory Control	Partial
Advisory Services	Partial
Resolution of Complaints and Feedback	Partial
Identification and Control of Nonconformities (NC)	Partial
Corrective Action (CA)	Partial
Preventive Action (PA)	Partial
Continual Improvement	Partial
Internal Audits	No
Risk Management	Partial
Management Review	Yes
Personnel Management	Partial
Personnel Training	Partial
Competency Assessment	Partial
Authorization	No
Review of Staff Performance	No
Accommodation and Environmental Conditions	Partial
Laboratory equipment	Partial
Calibration of Equipment	Yes

*Figure 3. Screenshot of the questions summary tab (left) and the policies summary tab (right) of the SLIPTA e-tool.**

In a recent example of the e-tool's utility, during a full internal audit using the SLIPTA e-tool, an MOD laboratory manager recognized gaps in documenting processes and procedures: many documents spanning the 12 QMS sections were incomplete by SLIPTA and ISO 15189 standards and thus needed to be improved or overhauled. The laboratory is now systematically writing and revising key documentation including laboratory manuals, policies, procedures and forms.

The GSSHealth SLIPTA e-tool is available for download at: https://www.gsshealth.com/tools. Upon registration, the e-tool is offered as a free download in English or French. The tool will soon be available in Khmer.

*All figures shown in this article are based on dummy data and do not represent actual results from sites.