**What is SLMTA?**

SLMTA – A Mentoring and Training Program with Structured Improvement Methodology

**Six Building Blocks of SLMTA**

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<td><strong>What do you do?</strong></td>
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<td>66 Management tasks and routines</td>
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<th>IMPLEMENTATION</th>
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<td><strong>3-workshop Series</strong></td>
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<td>Behavioral and cultural changes take time!</td>
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**The SLMTA Process**

1 - Productivity Management
2 - Work Area Management
3 - Inventory Management
4 - Procurement Management
5 - Equipment Maintenance
6 - Quality Assurance
7 - Specimen Management
8 - Laboratory Testing
9 - Test Result Reporting
10 - Documents & Records

**Strengthening Laboratory Management Toward Accreditation (SLMTA)** is a mentoring and training program designed to bring about immediate and measurable improvement in laboratory quality and services using available resources.

SLMTA Implementation requires approximately 1 year, and consists of 3 workshops, separated by time to implement tailored improvement projects facilitated by site visits and/or on-site mentoring.

**What is SLMTA?**

- Workshop #1 (3 months)
- Workshop #2 (3 months)
- Workshop #3 (3 months)

Behavioral Changes & Laboratory Improvement
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<th>Key Areas of Work</th>
<th>Desired Outcome</th>
<th>What do managers do (Tasks and Routines)?</th>
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| **1. Productivity Management** | **Efficient workflow** | 1. Organize the laboratory and coordinate work space to allow for smooth, efficient service operations  
2. Design workflow for optimal productivity  
3. Prioritize and assign work according to personnel skill level, workloads, and completion timeframe  
4. Assess personnel competency against standards and determine corrective action and training needs  
5. Conduct weekly staff meetings to coordinate activities, review lab operations, reward success, celebrate accomplishments, and resolve issues  
6. Meet with staff individually to communicate expectations, provide feedback, coaching, or on-the-job training to ensure competency and productivity  
7. Provide/coordinate new-hire orientation and training to staff  
8. Maintain and update personnel records (training, certification, competency assessment)  
9. Create a work plan and budget based on personnel, test, facility, and equipment needs  
10. Create/review/forward reports on lab operations to upper management  
11. Implement measures to motivate staff to improve quality of work and productivity (e.g., training, job rotation, employee of the month, thank-you letter, etc.)  
12. Develop and implement lab improvement plans based on best practices and feedback from staff, patients, customers, quality indicators, and external assessment  
13. Communicate to upper management regarding personnel, facility, and operational needs |
|                   | **Evenly distributed workload** | 1. Assess any reported incidence or abnormalities  
2. Authorize and follow up on repairs  
3. Monitor staff adherence to safety rules & practices  
4. Ensure appropriate physical work environment for testing  
5. Ensure that safety equipment is accessible and readily available (e.g., place safety equipment such as sharp box and PPE close to work station to encourage use)  
6. Ensure Safety Manual with safety procedures for laboratory functions and possible emergencies is accessible to and reviewed by all staff  
7. Ensure reagents and chemicals are stored properly  
8. Ensure that waste is properly disposed |
| **2. Work Area Management** | **Clean, adequate, safe, and functional equipment, work space, and storage area** | 1. Review inventory log of all equipment and parts  
2. Review inventory log of all supplies and reagents  
3. Monitor consumption rate and inventory level to determine when and how much to re-order  
4. Enforce good stock management practices (proper storage, stock cycling, inspection of incoming orders, etc.)  
5. Inspect quality of existing inventory and dispose of expired test kits, reagents, supplies and equipment according to policy |
| **3. Inventory Management** | **No over-stocking** | 1. Accurately evaluate needs for equipment, supplies and reagents taking into consideration past patterns, present trends, and future plans  
2. Place orders as necessary in accordance with needs and budgetary constraints  
3. Monitor procurement orders  
4. Appropriately document and maintain accurate records of all purchase orders and requisitions |
| **4. Procurement Management** | **Fresh supplies are always available for continuous service** | 1. Review inventory log of all equipment and parts  
2. Review inventory log of all supplies and reagents  
3. Monitor consumption rate and inventory level to determine when and how much to re-order  
4. Enforce good stock management practices (proper storage, stock cycling, inspection of incoming orders, etc.)  
5. Inspect quality of existing inventory and dispose of expired test kits, reagents, supplies and equipment according to policy |
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| 5. Routine/Preventive Maintenance of  | Equipment functioning all the time to ensure uninterrupted and quality service   | 1. Consolidate and post equipment service information (contact, service frequency & dates, etc.) at site  
2. Ensure proper preventive maintenance (i.e., cleaning, proper shutdown) on instruments when used  
3. Perform and record troubleshooting on malfunctioning equipment  
4. Review and sign maintenance logs to ensure regular preventive maintenance and timely repairs  
5. Take corrective actions or issue repair orders and record all issues  
6. Follow up on all corrective action – see if equipment is properly functioning, observe for trends or determine training needs  
7. Communicate to upper management equipment specifications and maintenance needs  

| Quality Assurance                      | Consistently accurate and reliable test processes (pre-analytical, analytical, post-analytical) | 1. Ensure that the Quality Manual with quality assurance policies and procedures is accessible to and reviewed by all staff  
2. Ensure that QC material is tested according to SOP  
3. Establish acceptable ranges for control material  
4. Validate new equipment, reagents, and supplies  
5. Track test performance (e.g., Levy-Jennings chart) for trends  
6. Review discordant rates and determine appropriate action  
7. Review records of environmental checks & QC trends to assess impact on testing and take corrective action  
8. Review occurrence log for patterns/trends and take corrective action  
9. Monitor reagent performance  
10. Customize site-specific SOPs as needed  
11. Ensure that SOP are read and understood by staff  
12. Enroll in EQA program, monitor results, and take corrective actions  
13. Periodically observe/assess accuracy of staff performance and take corrective action  

| Specimen Collection & Processing      | Proper specimen collection, labeling, packaging, storage, tracking, and disposal   | 1. Determine appropriate tests based on test request and assign test responsibility  
2. Review specimen log for completeness  
3. Enforce good specimen handling and processing practices  
4. Ensure adherence to specimen referral requirements  
5. Track specimen referral status and review referral reports to ensure timely return of test results  

| Laboratory Testing                    | All laboratory tests are performed promptly and accurately; test results are validated and recorded before release | 1. Monitor testing to ensure SOPs are followed and tests are performed and reported properly and promptly  
2. Cross-check test reports against test request to ensure completion of all tests  
3. Review test records and findings promptly to ensure accuracy and timely release of test results  
4. Validate assigned tests and specific abnormal results  

| Test Result Reporting                 | Reporting of accurate test results and findings within established turn around time; satisfied clients | 1. Aggregate and report all test findings for each patient  
2. Ensure test results reach referral sites or test requestors  
3. Consult with clients regarding specimen quality, test results and findings in a professional manner and ensure each issue is resolved promptly and documented appropriately  
4. Conduct customer satisfaction survey to identify areas for improvement  

| Documents & Records Management        | Permanent, secure, and traceable records and approved, up-to-date, and easily accessible documents | 1. Maintain a library of documents (policies, guidelines, SOPs, references, etc.); review and update annually  
2. Maintain integrity, organization, and confidentiality of records (client test results, specimen transfer logs, maintenance logs, inventory logs, etc.)  
3. Assure proper record retention, rotation to storage, and disposal according to protocol  

What is SLMTA? Katy Yao, 2015, CDC, USA
### Module: Introduction
- Envision Your Dream Laboratory
- “My Lab” Key Message Puzzles

### Cross-cutting
- Process Mapping
- Managing Performance – The Balanced Scorecard
- PDCA Cycle as the Improvement Method
- Workstation Set-up
- What Would You Do?
- Planning Improvement Projects – Master Class
- Reporting Improvement Projects
- Conducting a SLMTA Follow-up Visit

### Productivity Management
- Process + Structure = Outcome
- Mapping Out The Floor Plan of Your Laboratory
- Redesigning The Floor Plan of Your Laboratory
- Improving a Problem Floor Plan
- Making a Cup of Tea
- Whisper Down the Alley
- What are the Benefits of a Standardized Process?
- How Do You Assign Personnel to Tasks?
- Creating a Management Calendar
- Competency Assessment
- Planning and Conducting a Staff Meeting
- Creating a Personnel File

### Activity: “My Lab” Key Message Puzzles

### Module: Work Area Management
- Laboratory Safety Demonstrations
- Assessing Safety Incidents
- Conducting a Safety Audit
- What did we see on the Site Visits?

### Module: Inventory Management
- Creating a List of Supplies for a Test
- What’s Wrong with this Storeroom?
- Did You Receive What You Ordered?

### Module: Procurement Management
- Forecasting and Calculating Ordering Amounts

### Module: Maintenance Of Equipment
- Creating a Maintenance and QC Log
- Making a Service Call

### Module: Quality Assurance
- Using Standard Operating Procedures
- Is QC That Important?
- Is There More to QC Than Just Plotting the Data?

### Module: Specimen Collection and Processing
- Specimen Collection: Phlebotomy Role-Play
- Specimen Management
- Packaging Specimens for Shipment to Referral Sites
- Tracking Referral Specimens

### Module: Laboratory Testing
- Validation of Test Results
- Is the Test Report Ready To Be Released?

### Module: Test Result Reporting
- Customer Service
- Meet the Clinician

### Module: Documents and Records Management
- Why Was the Outdated Version Used?

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**What is SLMTA?** Katy Yao, 2015, CDC, USA
Each laboratory participating in SLMTA is audited in the beginning (baseline) and at the end (exit) using the SLIPTA checklist. The difference between baseline and exit scores, and their respective star ratings, is calculated to quantify the effect of the program on laboratory function and quality.

In addition to SLIPTA scores, laboratories may have Improvement Project data such as turnaround time (TAT), sample rejection rate, stockout rate, and photographs of physical improvements.

**What is SLMTA?** Katy Yao, 2015, CDC, USA
Baseline vs. Exit Audit Results (n=302)

Average Score 39% 64%

Average Implementation Time = 16 months

Note: Each square represents one laboratory

Spread of the SLMTA Program

Year when SLMTA was initiated:  
- 2010
- 2011
- 2012
- 2013

Examples of SLMTA Results

**Waste Reduction**

Botswana
- Reduced expired reagent from $17,000 to $280 USD, and improved quality of test results

Rwanda
- Sample rejection rate dropped from 80% to 20%

**Revenue and Efficiency**

Cameroon:
- Doubled lab revenue from $12,000 to $24,000 USD
- Increased # patients served from 74 to 194 per week

**10 laboratories achieved ISO accreditation**

**The Human Factor**
Empowered, motivated, and committed laboratory personnel