***GLI TRAINING PACKAGE:***

***PROGRAMMATIC MODULES FOR DIAGNOSTIC NETWORK STRENGTHENING***

A Framework

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ACRONYMS

**AIDS** Acquired Immunodeficiency Syndrome

**CDC** US Centers for Disease Control and Prevention

**DST** Drug susceptibility test

**EQA** External quality assessment

**FIND** Foundation for Innovative New Diagnostics

**GLI** Global Laboratory Initiative

**HIV**  Human Immunodeficiency Virus

**LED FM**  Light-emitting diode fluorescence microscopy

**LPA** Line probe assay

**M&E** Monitoring and evaluation

**MDR-TB** Multidrug-resistant tuberculosis

**MOH** Ministry of Health

**MTB** *Mycobacterium tuberculosis*

**PEPFAR** US President’s Emergency Plan for AIDS Relief

**PLHIV** People living with HIV/AIDS

**PT** Proficiency testing

**QA** Quality assurance

**QC** Quality control

**RIF** Rifampicin

**SOP** Standard Operating Procedure

**TB**  Tuberculosis

**TWG** Technical Working Group

**USAID** US Agency for International Development

**WHO** World Health Organization

**XDR-TB** Extensively drug-resistant tuberculosis

ACKNOWLEDGEMENTS

This training package is based on an earlier version of the Xpert MTB/RIF Training Package, developed by the Global Laboratory Initiative (GLI) with financial support of the United States Agency for International Development.

Key updates and revisions to the original training package were made, as well as development of a new set of training modules for programme planning and implementation.

The development of this revised training package was led by Heidi Albert and André Trollip (FIND South Africa) and Wayne van Gemert (WHO).

Technical input into the development of the package was provided by Marinus Barnard (independent consultant), Victoria Harris (FIND), Kameko Nichols (independent consultant) and Indira Soundiram (Cepheid Inc.).

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GLI TRAINING PACKAGE: PROGRAMMATIC MODULES FOR DIAGNOSTIC NETWORK STRENGTHENING

Background and rationale

Elimination of tuberculosis (TB) is a major global health priority. Multidrug-resistant tuberculosis (MDR-TB) and HIV-associated TB pose enormous challenges to health systems due to the complexity of diagnosis and treatment. The current landscape for TB response underscores the urgent need for rapid diagnosis of TB, especially in resource- limited settings.

In 2010, the World Health Organization (WHO) endorsed a real-time PCR-based molecular test, the Xpert MTB/RIF assay, which Cepheid developed to detect *Mycobacterium tuberculosis* complex (MTB) and rifampicin resistance (WHO, 2010). This automated, fully-integrated system enables molecular testing in lower levels of health systems, providing results within 90 minutes. With its ease of use, this system can be adopted in district and sub-district settings, where the impact of testing on the clinical decision-making process is greatest. Based on analysis of the body of evidence generated following the initial roll-out of Xpert MTB/RIF, WHO issued updated Xpert MTB/RIF policy recommendations in 2013. Updated policy guidelines include the strong recommendation for use of Xpert MTB/RIF as an initial diagnostic for TB and rifampicin resistance in adults and children suspected of having MDR-TB or HIV-associated TB, and the conditional recommendations that Xpert MTB/RIF is used as the initial diagnostic for all adults and children suspected of having TB (WHO, 2014).

In 2015, the introduction of the End TB Strategy outlined the global strategy and targets for tuberculosis prevention, care and control beyond 2015. Milestones for 2025 include a 75% reduction in the number of TB deaths compared to 2015; a 50% reduction in TB incidence rate compared with 2015 and zero TB affected families facing catastrophic costs due to TB. By 2035, the targets are to reduce the number of TB deaths by 95% compared to 2015, and the incidence rate by 90% compared to 2015. The ambitious aims of the End TB Strategy highlight the need for: expanding the reach and scope of interventions; engaging the whole health system, both public and private, to best benefit from all systems; and pursuing new scientific innovations in TB prevention and care. In this strategy, WHO also calls for early diagnosis of TB and makes a new recommendation for universal drug susceptibility testing. The need for continued roll-out and scale-up of molecular technologies including Xpert MTB/RIF to increase testing coverage and to detect cases rapidly and accurately, and to provide universal drug susceptibility testing for all cases at risk has never been clearer.

The GLI Training Package

The GLI Training Package provides a comprehensive management and technical training resource to support the implementation of Xpert technologies (including Xpert® MTB/RIF and Xpert® MTB/RIF Ultra using the GeneXpert® platform) for the diagnosis and drug susceptibility testing of samples for tuberculous (TB).

This current release includes eight newly-developed Programmatic Modules (Table 1). Updates to the facility and technology modules are ongoing. In the interim, the existing GLI Training Package on Xpert MTB/RIF can be used in conjunction with the Programme Modules for diagnostic network strengthening. See link:

http://www.stoptb.org/wg/gli/trainingpackages.asp

Table 1. GLI Training Package: Programmatic Modules for Diagnostic Network Strengthening

|  |
| --- |
| Programmatic Modules |
| * PM1: TB Diagnostics – Global Policies & Strategies * PM2: Implementing TB Diagnostics – Practical Considerations * PM3: Plan and Establish a Sample Referral Network for TB Diagnosis * PM4: How to Plan and Implement a Quality Assurance Program * PM5: How to Plan and Implement Connectivity Solutions * PM6: How to Monitor and Evaluate your Programme * PM7: Funding your Programme * PM8: Plan an Integrated Diagnostic Approach |

Who needs to use this package and why

The GLI Training Package: Programmatic Modules for Diagnostic Network Strengthening is intended to be used by a variety of audiences for managers and staff currently or preparing to work in TB testing facilities using Xpert technologies.



**POLICY MAKERS**

Stakeholders at the ministry level and individuals involved in national and global policy should be aware of the training package so they can make it available to programme and facility managers.

****

**TB PROGRAMME MANAGERS**

Managers of national TB programmes should be trained on the programmatic modules so they can understand the infrastructure and human resource requirements for implementing and sustaining Xpert technologies. The programmatic modules provide information beneficial to all TB testing services, not only related to Xpert technologies.



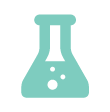
**QUALITY ASSURANCE (QA) OFFICERS**

QA officers responsible for organising QA schemes, post-market surveillance, training and supervision will require training using programmatic and facility modules.

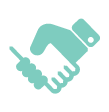


**CLINICAL MANAGERS AND STAFF**

Together with public health programme managers, clinical managers and staff (including physicians, nurses, and clinic and community health workers) play a critical role in providing TB testing services. Programmatic modules will provide clarity on the clinical algorithms and the important role these stakeholders play in the clinical / laboratory interface.

**LABORATORY MANAGERS AND STAFF**

Laboratory managers, who must advocate for the required resources to support TB testing services and ensure service delivery at the facility, will benefit from both programmatic and facility modules. The programmatic modules will help this group of stakeholders engage national policy and programme staff whilst the facility modules will ensure they have a good understanding of the processes required to ensure quality and efficiency at the bench.

**PARTNERS AND DONORS**

Partners and donors include stakeholders invested in Xpert technologies such as national ministry officials, private sector leaders, multi-lateral organisation officers, non-governmental organisation staff and internal governmental organisations. This group of stakeholders is responsible for the review, dissemination, delivery and continual evaluation of this training package.

How this package can be used

This training package was designed using a modular approach, thus, while there are linkages between modules, modules can stand alone and be combined in a variety of ways to best suit the intended audience. Suggested module combinations for specific participants are presented in the section, “[Different Sets of Training Workshops](#_Different_sets_of).”

Each module includes, at a minimum, a PowerPoint presentation and a Facilitator’s Guide. The Facilitator’s Guide includes detailed information on module content, flow and timing of the training session, important points to be made, directions for any practical exercises, and discussion questions with answers. Any module that includes an exercise will also have a worksheet to be given to each participant that provides directions for the activity and space for the participant’s work. Some exercises will have well-defined answers (e.g. mathematical calculations). In these cases, a handout with activity answers will be provided for distribution to participants at the end of the session. For exercises without clear answers, key points for discussion during the exercise will be included in the Facilitator Guide. All materials included in each module are described in the specific module sections below.

How to access this training package

This Framework document provides an overview of each module. The training package can be accessed at:

http://www.stoptb.org/wg/gli/trainingpackages.asp

PROGRAMMATIC MODULES FOR DIAGNOSTIC NETWORK STRENGTHENING

The GLI Training Package: Programmatic Modules for Diagnostic Network Strengthening is designed to equip managers at the national and regional level with the knowledge to plan, implement, monitor and evaluate the use of WHO-approved technologies as part of a TB diagnostic network.

|  |  |
| --- | --- |
| Intended Audience | Learning Objectives |
| * National TB programme officers * Managers and staff * Implementation partners * Regional stakeholders (e.g. supervising and support staff from supranational laboratories) | * Implement and scale-up Xpert TB capacity in countries * Design connectivity solutions to support transfer of results and facilitation of data analysis * Improve the quality of sample collection through national policy * Strengthen sample referral networks |

Module PM1: TB Diagnostics Global Policies and Strategies

### **Module PM1 Synopsis**

This module will provide participants with an overview of key considerations for implementing TB diagnostics at the country level. It will cover the End TB Strategy, WHO policy development on TB diagnostics, diagnostic algorithms, country processes for implementing new TB diagnostics, and indicators and targets for laboratory strengthening within the End TB Strategy.

### **Module PM1 Learning Objectives**

By the end of the module, participants should be able to:

* Identify the End TB Strategy goals and targets
* List key objectives for diagnostic services related to the End TB Strategy
* List TB diagnostic technologies that are recommended by WHO
* Describe process for adopting new diagnostics at country level

### **Module PM1 Content**

This module includes three components:

1. PowerPoint set of 41 slides (**1 hour**)
2. Exercise: To understand the GLI planning tool and how to calculate estimated numbers of tests and facilities for each technology (**50 minutes**)
3. Group discussion framed by questions found on slide 38

This module includes background on TB statistics; slides 5 and 8 should be customized to country context.

Additional Materials:

* Facilitators guide (FG1)
* Calculation exercise worksheets (W1:PM1)

### **Module PM1 Additional Resources**

1. World Health Organization. Global Tuberculosis Programme. <http://www.who.int/tb>
2. World Health Organization. (2016). Framework of indicators and targets for laboratory strengthening under the End TB Strategy <http://www.who.int/tb/publications/labindicators/en/>
3. World Health Organization. (2015). Implementing tuberculosis diagnostics: A policy framework <http://www.who.int/tb/publications/implementing_TB_diagnostics/en/>
4. Global Laboratory Initiative, Stop TB Partnership. (2017). GLI Model TB Diagnostic Algorithms  
   http://stoptb.org/wg/gli/assets/documents/GLI\_algorithms.pdf
5. World Health Organization. (2015). WHO End TB Strategy <http://www.who.int/tb/post2015_strategy/en/>
6. New Diagnostic Working Group http://tbevidence.org/tb-diagnostics-pipeline/

Module PM2: Implementing TB Diagnostics: Practical Considerations

### **Module PM2 Synopsis**

### To provide participants with practical considerations for introducing new TB diagnostics in their country. The module will also outline the key steps to be taken in the process of implementing new TB diagnostics.

### **Module PM2 Learning Objectives**

At the end of this module, participants should be able to:

* List the key considerations for implementing new TB diagnostics
* List key steps to be taken when implementing new TB diagnostics
* Explain why mapping is important when implementing new TB diagnostics
* Describe the role of the TWG in this process
* List indicators to monitor implementation

### **Module PM2 Content**

This module is comprised of two parts:

1. PowerPoint presentation of 27 slides (**1hour 30 minutes**)
2. Guided discussion (**15 minutes**)

Additional Materials

* Facilitators guide (FG2)
* Note: There is no exercise for this module

### **Module PM2 Additional Resources**

1. WHO. Framework of indicators and targets for laboratory strengthening under the End TB Strategy. 2016. Available at http://www.who.int/tb/ publications/labindicators

Module PM3: Plan and Establish a Sample Referral Network for TB Diagnostics

### **Module PM3 Synopsis**

This module provides an overview of the necessity and the strengths and weaknesses of referral networks within the TB diagnostics network. It includes information on the coordination and supervision of current sample referral networks, and covers elements that should be incorporated in the design of an efficient and effective specimen referral network (other uses for the network, costs, insourcing vs. outsourcing, and M&E).

### **Module PM3 Learning Objectives**

At the end of this module, participants will be able to:

* Understand specimen referral networks as it relates to TB diagnostic networks
* Explain the strengths and weaknesses of specimen referral networks
* Put in place structures for ongoing coordination and supervision for all stakeholders
* Understand how your national testing algorithm affects your referral networks
* Begin to (re-)design a functional referral network
* Consider the implications of integration

### **Module PM3 Content**

This module includes four components:

1. PowerPoint set of 35 slides (**45 minutes**)
2. Exercise: Creating a national integrated specimen transport technical working group (IST TWG) (**55 minutes**)
3. Exercise: Understanding TAT (**55 minutes**)
4. Group discussion framed by questions found on slide 33

Additional materials:

* Facilitators guide (FG3)
* IST TWG worksheets (W1:PM3)
* TAT worksheets (W2:PM3)

### **Module PM3 Additional Resources**

1. GLI training package http://www.stoptb.org/wg/gli/TrainingPackage\_XPERT\_MTB\_RIF.asp
2. Global Health Security Agenda http://www.cdc.gov/globalhealth/security/actionpackages/national\_laboratory.htm

Module PM4: How to Plan and Implement a Quality Assurance Programme

### **Module PM4 Synopsis**

To provide participants with an introduction to the essential activities of a quality assurance (QA) programme. The module introduces participants to the concept of continuous quality improvement (CQI) and the roles and responsibilities for implementing QA diagnostics. The module also provides guidance on planning, implementing and monitoring a QA programme a central level.

### **Module PM4 Learning Objectives**

By the end of this module, participants should be able to:

1. Understand essential activities of a QA programme
2. Understand the concept of CQI and how to apply it to TB diagnostic network strengthening
3. Understand important components to consider when planning, implementing and monitoring a QA programme
4. Conduct a situational analysis to determine the gaps in your QA programme
5. Develop an action plan for improving quality of diagnostic testing for your country

### **Module PM4 Content**

This module is comprised of three components:

1. PowerPoint presentation of 49 slides (**2 hours**)
2. Guided discussion (**15 minutes**)
3. Exercise: Identify currently practices and gaps and propose activities and challenges to implement QA activities (**70 minutes**)

Additional Materials:

* Facilitators guide (FG4)
* Exercise worksheets (W1:PM4) & handouts (H1:PM4)

### **Module PM4 Additional Resources**

1. WHO. Laboratory Quality Management System: Handbook. 2011. Access from <http://apps.who.int/iris/bitstream/10665/44665/1/9789241548274_eng.pdf>.
2. Ensuring Quality of the Xpert MTB/RIF test- A practical guide (Part 1: Managing Xpert MTB/RIF Quality Assurance). Pre-publication 2016.

Module PM5: How to Plan and Implement Connectivity Solutions

### **Module PM5 Synopsis**

To provide participants with an overview of diagnostics connectivity solutions, familiarize participants with their functionalities and requirements, and introduce participants to the resources available to learn more about diagnostics connectivity solutions and the current products’ functionalities.

### **Module PM5 Learning Objectives**

By the end of this module participants should be able to:

1. What are the three components of a diagnostic connectivity solution?
2. What are advantages of electronic data over paper-based data?
3. How can diagnostic connectivity solutions can benefit TB programmes?
4. What should be included in a Data Use agreement with a software provider?
5. What are budgeting requirements during the preparation, set-up/installation and operational phases of a connectivity system?

### **Module PM5 Content**

This module is comprised of three components:

1. PowerPoint Presentation of 28 slides (**20 minutes**)
2. Exercise: Functionality of a data connectivity solution (**40 minutes**)
3. Facilitated discussion (**10 minutes**)

Additional materials:

* Facilitators guide (FG5)
* Functionality of a data connectivity solution worksheets (W1:PM5)

### **Module PM5 Additional Resources**

1. GLI Quick Guide to Diagnostics Connectivity Solutions: <http://stoptb.org/wg/gli/assets/documents/gli_connectivity_guide.pdf>
2. A comparison of available data connectivity solutions for TB diagnostics: [www.tinyurl.com/gliconnectivity](file:///C:\Users\heidialb\AppData\Local\Microsoft\Windows\Temporary%20Internet%20Files\Content.Outlook\859WFAY8\www.tinyurl.com\gliconnectivity)

Module PM6: How to Monitor and Evaluate your Programme

### **Module PM6 Synopsis**

To provide participants with an overview of monitoring and evaluation (M&E) & performance indicators. Participants will be introduced to the performance indicators of the End TB Strategy, and be guided in developing a framework for M&E for their own country.

### **Module PM6 Learning Objectives**

At the end of this module, participants should be able to:

1. Understand the monitoring and evaluation process
2. Be able to recognize different types of performance indicators and how they can be used
3. List End TB Strategy indicators
4. Understand the linkages between global, national and facility performance indicators
5. List the steps in revising the National TB M&E framework for your country

### **Module PM6 Content**

This module is comprised of four components:

1. PowerPoint Presentation of 36 slides **(2 hours)**
2. Guided discussion **(15 minutes)**
3. Exercise 1: To align performance indicators into a single consolidated M&E framework **(80 minutes)**
4. Exercise 2: To revise performance indicator source documents to enable collection of data **(80 minutes)**

Additional Materials:

* Facilitators guide (FG6)
* Worksheets for Exercise 1 and 2 (W1 & W2:PM6)

### **Module PM6 Additional Resources**

1. End TB Strategy. Access: <http://www.who.int/tb/post2015_strategy/en/>
2. WHO. National AIDS programmes: a guide to monitoring and evaluating HIV/AIDS care and support. Access: <http://www.who.int/hiv/pub/epidemiology/en/Care&SupportGuideE.pdf?ua=1>
3. USAID. A Guide for Monitoring and Evaluating Child Health Programs. 2005. Access: <http://www.who.int/hiv/strategic/me/en/#tools>
4. Monitoring and Evaluation toolkit- HIV/AIDS, Tuberculosis and Malaria. June 2004. Access: <http://www.who.int/hiv/strategic/me/en/#tools>

Module PM7: Funding your Programme

### **Module PM7 Synopsis**

This module will allow participants to define sources of funding and develop a budget for TB programmes and diagnostic services. The module includes information on key elements to be included in budgeting for TB diagnostic services, and the Global Fund New Funding Model process. The module also includes practical exercises using the WHO Planning and Budgeting tool, and a costing tool for Xpert implementation.

### **Module PM7 Learning Objectives**

By the end of this module, participants should be able to:

1. Define sources of funding for TB programmes and diagnostic services
2. Define key cost items that should be included in TB diagnostic services budgets
3. Identify steps required in development of budgets for TB diagnostic services
4. Understand how to use available tools to develop a comprehensive budget for TB diagnostic services

### **Module PM7 Content**

This module includes three components:

1. PowerPoint presentation of 25 slides (**1 hour**)
2. Group discussion framed by question on Slide 23 (**15 minutes**)
3. Costing exercise: To provide participants with a review of an example Xpert programme budget and a discussion of the cost elements in each worksheet (**45 minutes**)

Additional materials:

* Facilitators guide (FG7)
* Costing exercise worksheets (W1:PM7)

### **Module PM7 Additional Resources**

1. The Global Fund, Funding Model, <http://www.theglobalfund.org/en/fundingmodel/>
2. FIND, FIND-Negotiated Product Pricing, <http://www.finddx.org/pricing/>
3. WHO Global Tuberculosis Report (2016), [http://www.who.int/tb/publications/global\_report](http://www.who.int/tb/publications/global_report/gtbr2016_annex3.pdf?ua=1)
4. TB planning and budgeting tool, version 6, <http://www.who.int/tb/areas-of-work/monitoring-evaluation/financing/planning-tool/en/>
5. OneHealth, <http://avenirhealth.org/software-onehealth.php>

Module PM8: Plan an Integrated Diagnostic Approach

### **Module PM8 Synopsis**

### To provide participants with an overview of key considerations for planning an integrated diagnostic approach.

### **Module PM8 Learning Objectives**

By the end of this module, participants should be able to:

1. Define a multi-disease integrated diagnostic approach
2. List the benefits of adopting a multi-disease integrated diagnostic approach
3. Provide examples of an integrated diagnostic approach
4. Understand and be able to apply ten key considerations for planning and implementing an integrated approach

### **Module PM8 Content**

This module includes three components:

1. PowerPoint presentation of 24 slides (1 hour)
2. Group discussion framed by question on Slide 22
3. Exercise: To plan an integrated multi-disease testing device laboratory network **(1 hour)**

Additional materials:

* Facilitators guide (FG8)
* Plan an integrated diagnostic approach worksheets (W1:PM8)

### **Module P7 Additional Resources**

1. WHO Global TB Programme and HIV Department information note: Considerations for adoption and use of multi-disease testing devices in integrated laboratory networks http://www.who.int/publications/guidelines/tuberculosis/en/

DURATION OF TRAINING SESSIONS PER MODULES

|  |  |
| --- | --- |
| Name of Module | Time Required |
| PM1: Diagnostics – Global Policies & Strategies | Total: 1h 45min  Lecture: 1h  Discussion 15min  Exercise: 30min |
| PM2: Implementing TB Diagnostics – Practical Considerations | Total: 2h  Lecture: 1h 45 min Discussion: 15min |
| PM3: Plan and Establish a Sample Referral Network for TB Diagnostics | Total: 2h 45min  Lecture: 45min  Discussion: 15min Exercise 1: 55min Exercise 2: 55min |
| PM4: How to Plan and Implement a Quality Assurance Program | Total: 3h 25min  Lecture: 2h  Discussion: 15min  Exercise: 70min |
| PM5: How to Plan and Implement Connectivity Solutions | Total: 1h 15 minutes  Lecture: 20min Discussion: 15min  Exercise: 40min |
| PM6: How to Monitor and Evaluate your Programme | Total: 4h 50min  Lecture: 2h Discussion: 15min Exercise 1: 80min Exercise 2: 80min |
| PM7: Funding your Programme | Total: 2h  Lecture: 1h Discussion: 15min  Exercise: 45min |
| PM8: Plan an Integrated Diagnostic Approach | Total: 2h 15min  Lecture: 1h  Discussion 15 min Exercise: 1h |

DIFFERENT SETS OF TRAINING WORKSHOPS

A variety of different training courses can be created from the materials in the Xpert TB Training Package, depending on the intended audience. Different audiences that may be targeted include:

* National and higher level stakeholders involved in policymaking
* TB programme managers
* Trainers (TOT course)
* Lab managers and staff working at the intermediate and lower levels

Suggested full training courses for various groups of participants are outlined in the   
table below.

|  |  |
| --- | --- |
| **Program Managers and National  Level Staff** | **Advanced Users/Supervisors** |
| PM1: Diagnostics – Global Policies & Strategies  PM2: Implementing TB Diagnostics – Practical Considerations  PM3: Plan and Establish a Sample Referral Network for TB Diagnostics  PM4: How to Plan and Implement a Quality Assurance Program  PM5: How to Plan and Implement Connectivity Solutions  PM6: How to Monitor and Evaluate your Programme  PM7: Funding your Programme  PM8: Plan an Integrated Diagnostic Approach | - |
| **Basic Users** | **Clinicians** |
| - | - |

TRAINING SCHEDULES

The theoretical and practical sessions of the GLI Training Package: Programmatic Modules for Diagnostic Network Strengthening workshop is designed to be delivered in 3-4 days. Below is a draft timetable given as an example, which should be adapted to your needs and setting. When planning your own agenda, please refer to the above section, “Duration of Training Sessions per Module”.

**DAY 1:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Start Time** | **End Time** | **Duration** | **Description** | **Faculty** |
| 08:30 | 09:00 | 30min | Registration |  |
| 09:00 | 09:30 | 30min | Welcome & Introductions, Workshop Goals, Objectives |  |
| 09:30 | 10:00 | 30min | Pre-Test |  |
| 10:00 | 11:00 | 1h | PM1: Diagnostics – Global Policies & Strategies |  |
| 11:00 | 11:15 | 15min | *Break* |  |
| 11:15 | 12:00 | 50min | PM1: Diagnostics – Global Policies & Strategies (Exercise & Discussion) |  |
| 12:00 | 13:30 | 1h 30min | *Lunch* |  |
| 13:30 | 15:45 | 2h15min | PM2: Implementing TB Diagnostics – Practical Considerations |  |
| 15:45 | 16:00 | 15min | *Break* |  |
| 16:00 | 16:30 | 30min | Daily Evaluation |  |

**DAY 2:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Start Time** | **End Time** | **Duration** | **Description** | **Faculty** |
| 09:00 | 09:45 | 45min | PM3: Plan and Establish a Sample Referral Network for TB Diagnostics |  |
| 09:45 | 10:40 | 55min | PM3: Plan and Establish a Sample Referral Network for TB Diagnostics  (Exercise 1) |  |
| 10:40 | 11:00 | 20min | *Break* |  |
| 11:00 | 12:20 | 1h 20min | PM3: Plan and Establish a Sample Referral Network for TB Diagnostics  (Exercise 2 & Discussion) |  |
| 12:30 | 14:00 | 1h 30min | *Lunch* |  |
| 14:00 | 16:00 | 2h | PM4: How to Plan and Implement a Quality Assurance Program |  |
| 16:00 | 16:15 | 15min | *Break* |  |
| 16:15 | 17:40 | 85min | PM4: How to Plan and Implement a Quality Assurance Program  (Exercise) |  |
| 17:40 | 18:00 | 20min | Daily Evaluation |  |

**DAY 3:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Start Time** | **End Time** | **Duration** | **Description** | **Faculty** |
| 09:00 | 09:20 | 20min | PM5: How to Plan and Implement Connectivity Solutions |  |
| 09:20 | 10:15 | 55min | PM5: How to Plan and Implement Connectivity Solutions  (Exercise & Discussion) |  |
| 10:15 | 10:30 | 15min | *Break* |  |
| 10:30 | 12:30 | 2h | PM6: How to Monitor and Evaluate your Programme |  |
| 12:30 | 13:30 | 1h 30min | *Lunch* |  |
| 13:30 | 14:55 | 80min | PM6: How to Monitor and Evaluate your Programme  (Exercise 1) |  |
| 15:00 | 15:15 | 15min | *Break* |  |
| 15:15 | 16:50 | 95 min | PM6: How to Monitor and Evaluate your Programme  (Exercise 2 & Discussion) |  |
| 16:50 | 17:00 | 10min | Daily Evaluation |  |

**DAY 4:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Start Time** | **End Time** | **Duration** | **Description** | **Faculty** |
| 09:00 | 10:00 | 1h | PM7: Funding your Programme |  |
| 10:00 | 11:00 | 1h | PM7: Funding your Programme  (Exercise & Discussion) |  |
| 11:00 | 11:15 | 15min | *Break* |  |
| 11:15 | 12:15 | 1h | PM8: Plan an Integrated Diagnostic Approach |  |
| 12:15 | 13:45 | 1h 30min | *Lunch* |  |
| 13:45 | 15:00 | 1h15min | PM8: Plan an Integrated Diagnostic Approach  (Exercise & Discussion) |  |
| 15:00 | 15:15 | 15min | *Break* |  |
| 15:15 | 15:45 | 30min | Post-Test |  |
| 15:45 | 16:15 | 30min | Overall Workshop Evaluation |  |
| 16:15 | 16:45 | 30min | Closing Ceremony and Presentation of Certificates |  |

BEFORE THE TRAINING

Customization of Slide Sets

Certain modules include slides with data that should be customized based on national/regional context. Slides for customization are marked with this symbol. These slides should be updated ahead of the training, and the trainer should make sure they are familiar with these country-specific statistics or information. Specific slides to be customized can be found in the table below:

|  |  |
| --- | --- |
| **Module** | **Slides to be customized** |
| PM1: Diagnostics – Global Policies & Strategies | **Slide 4**: Global TB Statistics  **Slide 5**: Regional/national TB statistics  **Slide 6 & 7**: Global progress and challenges in TB care  **Slide 8**: Regional/national progress and challenges in TB care  **Slide 22:** Global TB diagnostic pipeline |
| PM2: Implementing TB Diagnostics – Practical Considerations | No slides for customization |
| PM3: Plan and Establish a Sample Referral Network for TB Diagnostics | **Slide 20**: Country testing algorithm  **Slide 29**: Coordination of existing specimen referral networks |
| PM4: How to Plan and Implement a Quality Assurance Program | **Slide 19**: Plan QA – Roles and Responsibilities |
| PM5: How to Plan and Implement Connectivity Solutions | No slides for customization |
| PM6: How to Monitor and Evaluate your Programme | No slides for customization |
| PM7: Funding your Programme | No slides for customization |
| PM8: Plan an Integrated Diagnostic Approach | No slides for customization |

Classroom

To provide an optimal learning experience, a classroom should be made available for the lectures, discussions, and exercises associated with each module. The classroom should be comfortable, distraction-free and include: 1) tables and chairs, and 2) conveniently-located outlets for a computer and projection monitor. Windows in the room should have curtains, or be easily darkened when necessary, to provide appropriate conditions for LCD projection. To facilitate discussion and interaction amongst participants, the tables should be arranged in a semi-circle or classroom style, giving all participants and unobstructed view of the projection monitor. It is necessary to make sure that all trainees, trainers, guests and observers (if any) are comfortably accommodated in the classroom. Overcrowding should be avoided. Bottled water and glasses should be made available on each table.

The classroom should have:

* 2 flip charts with easel
* Markers (different colours, for flipcharts)
* Laptop computer
* Projection monitor (LCD, compatible with computer)
* White screen or whiteboard for LCD projection
* Extension cords and adaptors
* Wastebasket
* Laser printer

Classroom supplies:

* Marking pens
* Masking tape for posting flip chart pages
* Note pads
* Pens, pencils and erasers
* Calculators (one per participant, as necessary)
* Stapler and staples
* Puncher

Printing Materials / Handouts for Participants

The workshop facilitator or trainer should ensure that appropriate materials are available to each participant at the start of the workshop. Printed materials include:

* Pre-course and post-course tests
* Daily evaluation questionnaire
* Post workshop evaluation
* Handouts (texts, exercises and supplementary materials as stated per module)
* Name tents
* Name badges

Instructions on How to Arrange the Participant Manual

Taking into consideration the complexity of the training content as well as the need for flexibility when compiling training materials, it is recommended to arrange the Participant Manual in a binder that allows for printed materials to be inserted as and when needed.

The exercises should NOT be inserted in this binder beforehand. After the exercise, these materials can be stapled and punched for insertion in the Participant Manual by the participants themselves. Handouts with exercise answers should be distributed after the exercise has been completed. Please study the exercise descriptive texts in the module facilitator guides to understand exactly how exercise materials should be distributed.

Pre & Post Assessments

Assessments are conducted before & after the training. Pre and post assessment questions are provided in the Question Bank document. An example of a pre & post assessment covering all eight of the programmatic modules is also provided. If the facilitator is not providing training on all the modules, the example can be customized to include more questions from the modules that form part of the training. Ideally the pre & post assessments should consist of 10 - 20 questions. A list of questions (and answers) for all the programmatic modules is provided at the end of the Question Bank.

Criteria for Participation Certificate

At the end of the workshop, each participant that has met the criteria for successful completion will receive a Certificate of Attendance. The criteria for successful completion of the course include:

* Daily attendance and active participation
* Completed written post-test- Pass mark for the post assessment is 50%.

Prior to the workshop, do not forget to:

* Identify appropriate individuals who will sign the certificate
* Verify spelling of names
* Print certificates

Prepare to Train

**Know what you are training**: This is critical to the success of the training. Even the best of training skills will not hide the fact that a trainer does not know the content. Therefore, it is imperative to:

* Know the goals and objectives of the training
* Know the content of the training
* Know the training activities (i.e. discussions, exercises)
* Know the customized data – Modules that require country/regional customization should be updated and you should be familiar with the data

K**now your audience**:

Adults require specific training approaches, so special consideration should be made to incorporate adult learning principles and training techniques to fully engage adult learners. Some principles and associated teaching techniques are presented in the table below.

|  |  |
| --- | --- |
| **Principle** | **Training Technique** |
| Adults bring a wealth of knowledge and experience and they want to share their knowledge and experience | Encourage participants to share their knowledge and experiences. Include activities that utilize their knowledge and experience |
| Adults are decision-makers and self-directed learners. | Include problem-solving activities |
| Adults have different learning styles that must be respected | Provide multiple ways for participants to learn the material |
| Adults want to participate rather than just listen to a lecture | Create a participatory learning environment with various types of activities |
| Adults are motivated by information or tasks that are meaningful and applicable to their jobs. | Relate the content and skills to the participant’s jobs |
| Adults prefer training that focuses on real life problems | Relate content to the types of problems they encounter in their jobs |
| Adults expect their time during training to be used carefully | Follow a realistic time schedule |
| Adults feel anxious if participating in a group that makes them look uninformed, either professionally or personally | Avoid criticism. Acknowledge all participant’s contributions. |
| Adults learn best in a positive environment where they feel respected and confident | Create a positive environment by provide positive feedback and showing respect to all participants. |
| Adults come from different cultures, life-styles, religious preferences, genders, and ages. | Respect all differences and encourage participants to respect each other’s differences as well. |

**Organization**: Use effective organizational skills such as:

* Organizing the training logically
* Following a plan
* Using checklists
* Keeping everyone informed

**Practice**: Practicing your training presentations helps to ensure that the presentations will be successful

* Out loud in front of a mirror (if you will be standing to present, then practice that way)
* With the materials and equipment before the training
* Rehearse in the training room if possible
* Time your presentation

**Prepare the Training Space**: Before participants arrive, ensure that the training room is set up, all equipment is functioning and all materials are available.

* Check the room before the training (make sure there are enough tables and chairs, and that they are arranged appropriately)
* Make sure all of your materials, supplies and equipment are available
* Test all equipment before the training
* Download files on the computers (if necessary)
* Prepare as much ahead of tome as possible (i.e. flip chart pages, distribute manuals/handouts, arrange things for activities and exercises)

**Back-up Plans**: Sometimes problems occur so it is best to have a back-up plan for those problems that can be anticipated.

* Have extra materials and supplies available
* Use multiple formats (handouts, slides, flipcharts, etc.). Sometimes the electricity will go out so you will be unable to use the PowerPoint slides. Having handouts available will enable the training to continue.
* Be flexible. Problems often occur so relax and adjust to the situation.
* Make positive situations out of negative ones. For example, when problems occur, make them into a learning situation.