

# Tuberculosis Monitoring, Evaluation, and Surveillance Training for TB M&E Specialists in Armenia

August 2023



# Tuberculosis Monitoring, Evaluation, and Surveillance Training for TB M&E Specialists in Armenia

## TB DIAH

University of North Carolina  
123 West Franklin Street, Suite 330  
Chapel Hill, North Carolina 27516 USA  
Phone: 919-445-6949 | Fax: 919-445-9353  
[hub@tbdiah.org](mailto:hub@tbdiah.org)  
[www.tbdiah.org](http://www.tbdiah.org)



This publication was produced with the support of the United States Agency for International Development (USAID) under the terms of the TB Data, Impact Assessment and Communications Hub (TB DIAH) Associate Award No. 7200AA18LA00007. TB DIAH is implemented by the University of North Carolina at Chapel Hill, in partnership with John Snow, Inc. Views expressed are not necessarily those of USAID or the United States government. Publication ID Number SR-23-205 TB

## **ACKNOWLEDGEMENTS**

This report was produced by Naira Sergeeva, Monitoring and Evaluation (M&E) Specialist and member of the Global Fund HIV/TB Grant Program Coordination Team at the Ministry of Health, Republic of Armenia, and Naira Khachatryan, Acting Director of the National Center for Pulmonology of the Ministry of Health of the Republic of Armenia. The report was reviewed by Bridgit Adamou, Senior M&E Advisor with the TB Data, Impact Assessment, and Communications Hub (TB DIAH) project. Special appreciation goes to Alexander Asatiani, TB DIAH's Senior Regional Consultant for Eastern Europe and Eurasia, who supported planning and implementation of the country-level training along with the national counterparts and TB DIAH headquarters support staff. We acknowledge The Universal Consulting Group who helped organize the event and the United States Agency for International Development (USAID) for its financial support.

We thank the staff at the National Center of Pulmonology for their help with organizing the training and hosting the event.

All photos featured in this report are the property of TB DIAH. All individuals appearing in these photos were training participants and facilitators.

### **Suggested citation:**

Tuberculosis Monitoring, Evaluation, and Surveillance Training for TB M&E Specialists in Armenia. August 2023. TB DIAH, University of North Carolina at Chapel Hill.

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## ABBREVIATIONS

COE	Center of Excellence
DR	drug-resistant
ECDC	European Center for Disease Control
EEE	Eastern Europe and Eurasia
GF	Global Fund
MoH	Ministry of Health
M&E	monitoring and evaluation
NCID	National Center for Infectious Disease
NCTLD	National Center for Tuberculosis and Lung Diseases
NCP	National Center for Pulmonology
NGO	non-government organization
NTP	national TB program
PBMEF	Performance-Based Monitoring and Evaluation Framework
PCT	Project's Coordination Team
SMART	specific, measurable, achievable, relevant, and time-bound
TB	tuberculosis
TB DIAH	TB Data, Impact Assessment, and Communications Hub
ToT	training of trainers
TPT	TB preventive treatment
USAID	United States Agency for International Development
WHO	World Health Organization

## **BACKGROUND INFORMATION**

The Tuberculosis Data, Impact Assessment, and Communications Hub (TB DIAH), funded by the United States Agency for International Development (USAID), is part of USAID's new business model to fight TB: the Global Accelerator to End Tuberculosis (USAID TB Accelerator). The Accelerator is designed to increase investments from the public and private sectors to end the Tuberculosis (TB) epidemic, while simultaneously building local commitment and capacity to achieve the goals set forth at the United Nations High-Level Meeting. TB DIAH supports national TB programs (NTPs) in strengthening TB surveillance systems and improving data use, building capacity to report on countries' TB Roadmap indicators, strengthening monitoring and evaluation (M&E) skills, and developing and promoting online data resources.

TB DIAH's approach in the Eastern Europe and Eurasia (EEE) region builds upon a Center of Excellence (COE) model as a means of providing technical assistance to five EEE countries that USAID provides bilateral and regional TB support to: Armenia, Azerbaijan, Georgia, Moldova, and Ukraine. TB DIAH established a virtual EEE regional COE in TB M&E and Surveillance in May 2022 in Georgia.

Armenia's TB M&E team participated in a five-day, in-person EEE Regional Training of Trainers (ToT) organized by TB DIAH in Tbilisi, Georgia, May 1–5, 2023. The objective of the ToT was to build the capacity of NTP staff by training master trainers on data collection, reporting, analysis, visualization, and use to improve TB surveillance and program management. The goal was to have a cadre of master trainers able to deliver tailored TB M&E and surveillance training programs in their respective countries. Four master trainers from Armenia – all with TB program management and M&E backgrounds – were trained.

The expectation was that in their capacity as master trainers, participants would play a significant role in strengthening the M&E capacity of their respective NTPs by facilitating and delivering country-level follow-up trainings with TB DIAH's ongoing support. On the last day of the event, country teams worked on customized national training plans, which was another important output of the regional ToT.

## **ABOUT THE EVENT**

Upon returning to Armenia, and in continuous collaboration and communication with TB DIAH's national consultant, the Armenian master trainers started preparing for the national-level training of local specialists engaged in TB surveillance and M&E, including data collection, reporting, and analysis. Necessary negotiations were held with the Ministry of Health (MOH), Global Fund (GF) Projects Coordination Team (PCT), and relevant stakeholders from the National Center of Pulmonology (NCP), National Center for Infectious Diseases (NCID), and non-government organizations (NGOs). It was agreed to conduct a four-day, in-person training at the NTP office August 1-4. Remote participants had the opportunity to join online via Zoom. The arrangements were made with the support of TB DIAH.

Preparatory work included creating a training budget and training agenda, identifying participants, translating the ToT materials and adapting them to the local context, preparing PowerPoint presentations, and designing group work and exercises.

# TRAINING MODULES

The Armenian team reviewed the EEE ToT curriculum and customized it to the local context and capacity building needs. The curriculum was based on the same set of training modules originally included in the regional ToT. The eleven modules that were used for this training event are as follows:

1. TB epidemiology and control
2. M&E fundamentals
3. Performance-Based Monitoring and Evaluation Framework (PBMEF) indicators and reporting
4. Data collection
5. Use of technologies and understanding TB hotspot mapping
6. Data analysis, visualization, and interpretation
7. Data quality
8. Supportive supervision
9. Root cause analysis
10. Data use and sharing
11. Stakeholder analysis

## TUESDAY, AUGUST 1, 2023

### Welcome and Opening Remarks

At the beginning of the training, Alexander Asatiani, TB DIAH's Senior Regional Consultant for EEE, introduced the TB DIAH project and its objectives and scope. He presented background information on the activities that preceded the training in Armenia and provided useful links for participants.

After the introduction of participants, the training pretest was completed.



### Module 1: TB Epidemiology and Control

The NCP master trainers presented Module 1. Naira Khachatryan, NTP Manager and Acting Director of the NCP of the Armenian MOH, covered global TB strategies, targets, and key milestones. This included the End TB Strategy vision, goal, and 2035 targets: a 95 percent reduction in deaths due to TB (compared with 2015), a 90 percent reduction in the TB incidence rate (compared with 2015), and no affected families facing catastrophic costs due to TB.

In the next session, Anush Khachatryan, NCP M&E Department Head, reviewed TB epidemiology in the EEE countries with a focus on Armenia. This included TB burden estimates, notifications, and trends; drug-resistant (DR)-TB; TB/HIV coinfection; treatment outcomes; global progress towards ending TB; and the COE countries' progress towards ending TB. (Part of the slides were used from the European Center for Disease Control [ECDC] and the World Health Organization's [WHO] World TB Day webinar 2023. COE

country-specific data were abstracted from the ECDC/WHO 2023 report: TB surveillance and monitoring in Europe 2023–2021 data).

Nino Lomtadze, Head of the Surveillance and Strategic Planning Department at Georgia’s National Center for Tuberculosis and Lung Diseases (NCTLD), presented the following topics particularly important for TB specialists:

- TB case definitions
- TB classification groups (based on the anatomical site of disease, history of previous TB treatment [patient registration group], HIV status, and drug resistance)
- Extensively updated DR-TB definitions
- Updated treatment outcome definitions

Lomtadze shared current available guidance on TB surveillance.

Following Lomtadze’s presentations, participants had an extensive question and answer (Q&A) session where Lomtadze provided clarifications and informed the specialists that the changed definitions will be adopted through a multi-staged process, including revising protocols and guidelines approval by the MOH, changing recording forms, and training users.



## Module 2: M&E Fundamentals

Lilit Khachatryan, MOH GF PCT Program Coordinator, discussed basic M&E concepts; indicator types; and specific, measurable, achievable, relevant, and time-bound (SMART) objectives. Khachatryan led a group exercise after the presentation where the participants discussed specific cases and identified which was monitoring and which was evaluation.

Naira Sergeeva, MOH GF PCT M&E Specialist, continued with a discussion of M&E and the project life cycle; frameworks and fundamental documentation describing M&E activities; the purpose and components of an M&E plan; performance indicators; data collection, analyses, and quality;



and how to distribute M&E roles and responsibilities among program team members. Prior to developing the next country program proposal for GF, the facilitator encouraged participants (who are also GF Country Coordination Mechanism Working Group members), to use their acquired information and actively participate in developing the grant specific M&E plan.

At the end of the presentation, Sergeeva described the SMART objectives. Participants were advised to develop a log frame for specific cases related to TB or HIV using the five key components: input, process, output, outcome, and impact.



## WEDNESDAY, AUGUST 2, 2023

### Module 3: PBMEF Indicators and Reporting

Anush Khachatryan discussed the PBMEF indicators and guidance documents. She emphasized the importance of understanding the indicators and speaking the same language across the region to achieve global TB goals. Anush presented the comprehensive set of PBMEF indicators, organized into fourteen technical areas, including the following 10 core indicators that provide a snapshot of a country's progress towards ending TB:



- Contact Investigation Coverage
- TB Case Detection Rate or TB Treatment Coverage
- Bacteriological Diagnosis Coverage (Pulmonary TB)
- Private Sector TB Notifications
- Percent of TB Financing Expected from Domestic Sources
- DR-TB Notifications
- Childhood TB Notifications
- TB Treatment Success Rate
- DR-TB Treatment Success
- TB Preventive Treatment (TPT) Coverage

For each of the core indicators, Anush described the definition, numerator, denominator, category, unit of measure, data type, potential disaggregations, reporting level, and reporting frequency.



Sergeeva presented the TB/HIV indicators and their reference sheets. Participants from the NCP and NCID were asked to discuss the national program indicators and develop relevant reference sheets. It was noted that close collaboration between HIV and TB services is crucial to understanding the coverage of relevant services within health facilities, e.g., TPT services, TB screening of people

living with HIV, or HIV testing of TB patients.

## Module 4: Data Collection

### *Key Data Collection Concepts, Tools, and Standards*

Lilit Khachatryan delivered a presentation on data collection. She talked about the differences among data, information, and knowledge; basic concepts of data collection; qualitative versus quantitative data; and data analyses. The NCP staff actively engaged in a group discussion on common recording tools used in TB programs and shared their experiences, particularly regarding key paper based NTP recording tools available in the country. Armenia uses both paper and electronic forms. All the forms are provided by WHO and providers are trained on how to correctly complete them. Electronic data collection tools include e-TB manager, a video supported treatment app, and the national health management information system. TB data is verified by comparing one to another at the outpatient, primary healthcare, and administrative program levels. Multiple reasons for not transitioning to a completely electronic format include technical challenges that appear in electronic systems, absence of backup, lack of space on servers, limited investment for technical equipment, and lack of professional or qualified staff.

## Module 5: Use of Technologies and Understanding TB Hotspot Mapping

Naira Khachatryan discussed geographic information systems, hotspot analysis, TB hotspot mapping, tools for hotspot analysis, data elements of hotspot analysis, and its importance. Participants discussed the usefulness and advisability of using mapping analyses in public health programs.

**THURSDAY, AUGUST 3, 2023**

## Module 6: Data Analysis, Visualization, and Interpretation

### *Key Terminology and Concepts of Data Analysis*

Sergeeva opened Module 6 on data analysis, visualization, and interpretation. She covered the basic elements of descriptive statistics, including ratio, rate, proportion, percentage, median, mean, and trend. The objective of this session was to provide a basic understanding of important calculations that are useful in everyday work, such as conducting cascade analyses, selecting appropriate charts, identifying gaps, and recommending areas for improvement. With the participants, Sergeeva explored a few analysis topics to be able to better advise or understand information pertaining to the workplace. The trainer led a group activity related to analyses of the public health problem prevalence disaggregated by sex.

The cascade analysis was presented by Anush Khachatryan and Sergeeva both for TB and HIV indicators. A cascade approach is used to analyze TB or HIV epidemiological data to find gaps in quality of care. A cascade can quantify, track, and visualize how health and development programs are performing for the target population at progressive stages toward an expected outcome. For example, an HIV cascade gives an understanding of the proportion of patients not fully covered with essential services and those more at risk of spreading the infection.

After the presentation, Anush facilitated group work on selecting indicators for constructing cascades using national reports and actual project data. Group members created charts, interpreted the data, and identified gaps. Each group explained their cascades then presented possible actions for improvement.



### *Data Visualization: Best Practices*

Lilit Khachatryan delivered a presentation on data visualization which focused on TB data communication, visualization, and use. The trainer shared tips on what types of diagrams and graphs are more appropriate for various data, what to do, and what not to do. She presented the three steps for selecting visualizations: (1) determine if a visualization is necessary, (2) identify your audience, and (3) figure out what information you want to show your audience. She showed specific examples of good and bad data visualizations, suggested best practices in visually depicting information, and held a small exercise among participants.

### **Module 7: Data Quality**

#### *Data Quality Assessment*

Sergeeva presented the module on data quality. She described data quality dimensions, including data accuracy and verification at the health facility level, reliability, internal and external consistency, completeness, timeliness, precision, and integrity. Sergeeva provided specific examples of data quality and together with the group discussed the roles and responsibilities of the M&E team in ensuring high data quality. Sergeeva discussed with the group possible factors that compromise data quality that M&E people may face during their work. In the second half of the presentation, Sergeeva focused on data quality dimensions, the assessment process, and key factors and considerations for ensuring quality.



### **FRIDAY, AUGUST 4, 2023**

### **Module 8: Supportive Supervision**



#### *Supportive Supervision Techniques, Examples, and Practical Tips*

Naira Khachatryan presented on supportive supervision. She discussed different approaches to supervision; the differences between controlling and supportive supervision; the steps involved in conducting supportive supervision: before, during, and after a supervisory visit; its benefits and challenges; tools of self-assessment; and tips on providing constructive feedback to team members. Naira talked about the leadership skills required for supportive supervision and provided examples of effective communication skills. By the end of the session, she listed the challenges of supervision and conducted a Q&A session with the participants.

## Module 9: Root Cause Analysis

Lilit Khachatryan started her presentation by discussing the process of discovering root causes of problems to identify appropriate solutions. She discussed the “5 Whys” approach, its benefits, preparation methods, and limitations. Practical groupwork followed where groups named a problem and followed the 5 Whys approach. After this exercise Lilit presented the fishbone analysis. She discussed the benefits of constructing a fishbone diagram, its steps, problem statement, categorization, contributing factors, and that the many ribs signify deeper causes. She discussed its limitations, shared specific examples, then facilitated another groupwork.

## Module 10: Data Use and Sharing

### *Using TB M&E Results for Decision Making*

In this module, Lilit Khachatryan talked about the purpose of M&E, the conceptual framework for data demand and use, barriers to data use, how data demand and use are defined, stakeholder engagement, and key tools for data demand and use. Lilit described the underlying principles around decision making: decisions are choices made in support of goals, and all decisions are made based on some information. During a group activity, country representatives listed barriers they have faced in using or getting others to use data and information.



## Module 11: Stakeholder Analysis

Sergeeva facilitated the final session dedicated to stakeholder analyses tools. The trainer talked about ways of identifying TB M&E stakeholders and conducting stakeholder analyses, and then shared stakeholder engagement tools. The TB and TB/HIV groups were assigned groupwork where they were asked to fill in a stakeholder engagement table including the following list:

- Name of stakeholder organization, group, or individual (national, regional, or local)
- Stakeholder description (primary purpose, affiliation, and funding)
- Potential role in TB M&E (vested interest in the system)
- Level of knowledge of the issue (specific areas of expertise)
- Level of commitment (supports or opposes TB M&E, to what extent, and why)
- Available resources (staff, money, technology, information, or influence)
- Constraints (need funds to participate, lack of personnel, political, or other barriers)



The training wrapped up with completing the training posttest, group feedback, issuing of certificates at an award ceremony, and closing remarks.

## CONCLUSION

The conclusion of the TB M&E and Surveillance Training in Armenia marked an important step forward in enhancing the country's national M&E system. This training initiative, organized by TB DIAH and supported by USAID, brought together dedicated professionals to build their expertise in TB M&E and surveillance. The comprehensive curriculum, consisting of 11 modules, covered essential topics ranging from TB epidemiology and control to stakeholder analysis. The collaboration between national counterparts, TB DIAH, and other stakeholders was crucial in making this training a success. The knowledge and skills gained by the participants are expected to have a positive impact on strengthening Armenia's TB surveillance system, improving data use, and ultimately contributing to the efforts to end TB in the country.

One of the key sustainability strategies employed in this training program was developing training materials in the local language, Armenian. This approach reflected a commitment to ensuring that participants had access to high-quality training in a language with which they were most comfortable. The training materials were not simply translations but were customized to align with the country's specific needs and the context of the NTP. This customization ensured that the content was relevant and relatable to the participants, making it more likely that they would apply what they learned in their daily work.

By developing training materials in the local language, the team addressed a significant sustainability challenge – ensuring that the knowledge and skills gained by participants would continue to be accessible and usable in the Armenian TB program context. These materials will serve as a valuable resource, enabling participants to reference and reinforce what they have learned.

Another important sustainability measure was recording the training sessions. We used the opportunity brought by virtually streaming the event and recorded the entire training. This was done with the strategic aim of enabling our national counterparts to convert it into an online format. With the increasing importance of digital tools and remote learning, the practice of recording training sessions offers several advantages. First, it ensures accessibility. Recorded sessions can be easily shared online which allows individuals who couldn't attend in person or those seeking a review of the material to do so at their convenience. Second, it enhances scalability by making it possible to reach a broader audience. Third, it promotes continuous learning, enabling participants to revisit the content as needed, thereby enhancing their ability to apply their acquired knowledge and skills in their daily work. Finally, recording training sessions proves cost effective by reducing the necessity for repeated in-person sessions, resulting in valuable time and resource savings.

Sustainability also involves building the capacity of local institutions and individuals to carry forward the training program's objectives. In this regard, the program engaged national counterparts – master trainers – who formed the national working group to adapt and customize the curriculum to meet the country's specific needs. Master trainers not only contributed to the development and delivery of training materials but also gained a deeper understanding of the content, enabling them to continue conducting similar training sessions in the future.

## APPENDIX 1. LIST OF PARTICIPANTS

Participants		
Name	Affiliation	Country
Alvard Gharibyan	19 polyclinic (Yerevan)	Armenia
Anna Mergelyan	NCID	Armenia
Armine Harutyunyan	Real World Real People NGO	Armenia
Artyom Movsesyan	New Generation NGO	Armenia
Eduard Kabasakalyan	NCP	Armenia
Hakob Atshemyan	NCP	Armenia
Lilit Samsonyan	NCP	Armenia
Lusine Yeghiazaryan	NCP	Armenia
Lusine Musheghyan	NCP	Armenia
Marietta Mirzoyan	NCID	Armenia
Naira Mikaelyan	NCP	Armenia
Sofik Matevosyan	Ejmiatsin TB cabinet (Armavir)	Armenia
Syune Harutyunyan	NCID	Armenia
Tatevik Stepanyan	NCP	Armenia
Vardush Grigoryan	NCP	Armenia
Zaruhi Grigoryan	NCID	Armenia
Zori Mikayelyan	NCP	Armenia
Astghik Hovhannisyan	NCP	Armenia
Anik Ulumyan	NCP	Armenia
Gayane Tairiyan	NCP	Armenia
Lyubov Nikolayan	NCP	

Trainers/Facilitators		
Name	Affiliation	Country
Alexander Asatiani	TB DIAH	Georgia
Anush Khachatryan	NCP	Armenia
Lilit Khachatryan	MOH GF PCT	Armenia
Naira Khachatryan	NCP	Armenia
Naira Sergeeva	MOH GF PCT	Armenia
Nino Lomtadze	COE / NCTLD	Georgia

## APPENDIX 2. AGENDA

### 01-08-2023

Start Time	Duration h:mm	Agenda Item	Facilitators	
10:00	0:20	Welcome and introduction of the course	Alexander Asatiani	
10:20 AM	0:15	Introduction of participants	Audience	
10:35 AM	0:15	Pre-test	Anush Khachatryan	Naira Sergeeva
10:50 AM	0:15	Coffee Break		
11:05	3:30	Module 1: TB Epidemiology and Control		
11:05 AM	0:20	Global TB strategies, targets, key milestones	Naira Khachatryan	Anush Khachatryan
11:25 AM	0:25	TB epidemiology in the EEE countries	Anush Khachatryan	Naira Khachatryan
11:50 AM	1:00	TB Case definitions, M&E perspective	Nino Lomtadze	Anush Khachatryan
12:50 PM	0:30	Lunch Break		
1:20 PM	1:00	TB Case definitions, M&E perspective (continuation)	Nino Lomtadze	Anush Khachatryan
2:20 PM	0:15	Q/A		
2:35 PM	1:50	Module 2: M&E Fundamentals		
2:35 PM	0:30	Introduction to M&E concepts	Lilit Khachatryan	Naira Sergeeva
3:05 PM	0:45	M&E plans, indicators, and SMART objectives	Naira Sergeeva	Lilit Khachatryan
3:50 PM	0:15	Coffee Break		
4:05 PM	0:20	Group work	Lilit Khachatryan	Naira Sergeeva
4:25 PM	0:15	Group Feedback and Closing		

### 02-08-2023

Start Time	Duration h:mm	Agenda Item	Facilitators	
10:00 AM	0:20	Recap of day 1		
10:20 AM	3:15	Module 3: PBMEF indicators and reporting		
10:20 AM	0:20	Types of M&E Frameworks	Naira Sergeeva	Anush Khachatryan
10:40 AM	0:15	Performance-based M&E frameworks and TB indicators	Anush Khachatryan	Naira Sergeeva
10:55 AM	0:15	Coffee Break		
11:10 AM	0:40	TB indicators	Anush Khachatryan	Naira Sergeeva
11:50 AM	0:15	Q/A		

12:05 PM	0:35	TB/HIV coinfection indicators	Naira Sergeeva	
12:40 PM	0:15	Q/A		Lilit Khachatryan
12:55 PM	0:40	Lunch Break		
1:35 PM	1:20	Module 4: Data collection		
1:35 PM	0:40	Key data collection concepts, tools and standards	Lilit Khachatryan	Naira Sergeeva
2:15 PM	0:25	Group work	Naira Sergeeva	Lilit Khachatryan
2:40 PM	0:15	Coffee Break		
2:55 PM	1:15	Module 5: Use of technologies and understanding TB hotspot mapping		
2:55 PM	00:30	Overview of TB hotspot mapping technology in the EEE region	Naira Khachatryan	Lilit Khachatryan
3:25 PM	0:15	Coffee Break		
3:40 PM	0:20	Q/A		
4:00 PM	0:10	Group Feedback and Closing		

### 03-08-2023

Start Time	Duration h:mm	Agenda Item	Facilitators	
10:00 AM	0:20	Recap of day 2		
10:20 AM	3:40	Module 6: Data analysis, visualization, and interpretation		
10:20 AM	0:45	Key terminology and concepts of data analysis and visualization	Naira Sergeeva	Lilit Khachatryan
11:05 AM	0:15	Coffee Break		
11:20 AM	0:15	Q/A		
11:35 AM	1:00	Cascade analysis (TB)	Anush Khachatryan	Nino Lomtadze
12:35 PM	0:25	Cascade analyses (HIV)	Naira Sergeeva	Anush Khachatryan
1:00 PM	0:40	Lunch Break		
1:40 PM	0:20	Group activity		
2:00 PM	1:45	Module 7: Data quality		
2:00 PM	0:45	Key components and methodology	Naira Sergeeva	Lilit Khachatryan
2:45 PM	0:30	Group activity		
3:15 PM	0:30	Data quality assessment	Lilit Khachatryan	Naira Sergeeva
3:45 PM	0:15	Coffee Break		
4:00 PM	0:10	Group feedback and closing		

### 04-08-2023

Start Time	Duration h:mm	Agenda Item	Facilitators	
10:00 AM	0:20	Recap of day 3		
10:20 AM	1:00	Module 8: Supportive supervision		



10:20 AM	0:45	Supportive supervision techniques, examples and practical tips	Naira Khachatryan	Anush Khachatryan
11:05 AM	0:15	Coffee Break		
11:20 AM	2:20	Module 9: Root cause analysis		
11:20 AM	0:30	The 5 Whys approach	Naira Khachatryan	Lilit Khachatryan
11:50 AM	0:20	Group activity		
12:10 PM	0:30	Fishbone analysis	Lilit Khachatryan	Anush Khachatryan
12:40 PM	0:20	Group activity		
1:00 PM	0:40	Lunch break		
1:40 PM	0:45	Module 10: Data use and sharing		
1:40 PM	00:45	Using TB and HIV M&E results for decision making	Lilit Khachatryan	Anush Khachatryan
2:25 PM	0:20	Data sharing	Anush Khachatryan	Lilit Khachatryan
2:45 PM	1:10	Module 11: Stakeholder analysis		
2:45 PM	0:30	Tools for stakeholder analysis	Lilit Khachatryan	Naira Sergeeva
3:15 PM	0:15	Coffee Break		
3:30 PM	0:25	Group activity	Anush Khachatryan	Naira Sergeeva
3:55 PM	0:20	Post-test	Anush Khachatryan	
4:15 PM	0:10	Group feedback and closing		



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