

**Rational Pharmaceutical Management Plus Trip Report**  
**Pharmaceutical Management for Multi-Drug Resistant**  
**Tuberculosis Course, Moldova, December 6-10, 2004**

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## About RPM Plus

The Rational Pharmaceutical Management Plus (RPM Plus) Program, funded by the U.S. Agency for International Development (cooperative agreement HRN-A-00-00-00016-00) works in more than 20 developing countries to provide technical assistance to strengthen drug and health commodity management systems. The program offers technical guidance and assists in strategy development and program implementation both in improving the availability of health commodities—pharmaceuticals, vaccines, supplies, and basic medical equipment—of assured quality for maternal and child health, HIV/AIDS, infectious diseases, and family planning and in promoting the appropriate use of health commodities in the public and private sectors.

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## Abstract

RPM Plus is collaborating with the Stop TB Green Light Committee (GLC) to promote pharmaceutical management of multidrug-resistant tuberculosis (MDR-TB). As part of this collaboration RPM Plus is conducting training workshops on drug management related topics for staff of DOTS Plus programs in countries that have submitted proposals for support from the GLC. The course “*Pharmaceutical Management of Multidrug-Resistant Tuberculosis*” described in this report was conducted in Chisinau, Moldova on December 6-10, 2004. Participants who attended were from the National Tuberculosis Control Program, other departments within the Ministry of Health, and other partner organizations. The course covered all aspects of the pharmaceutical management cycle: selection, procurement, distribution, and use. Facilitators of the course were from Management Sciences for Health, the Green Light Committee and Partners in Health.

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## Key Words

Tuberculosis, multi-drug resistant tuberculosis, pharmaceutical management, GLC, Moldova



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## ACRONYMS

AIHA	American International Health Alliance
DMIS	Drug Management Information System
DOTS	Directly Observed Therapy Short-Course (WHO TB Control Strategy)
DOTS Plus	The WHO MDR-TB Control Strategy
GDF	Global Drug Facility
GFATM	The Global Fund to Fight AIDS, Tuberculosis & Malaria
GLC	Green Light Committee
MDR-TB	Multi-Drug Resistant Tuberculosis
MOH	Ministry of Health of Moldova
MSH	Management Sciences for Health
NTP	National Tuberculosis Program of Moldova
PIH	Partners in Health
QA	Quality Assurance
RPM Plus	Rational Pharmaceutical Management Plus Program [MSH]
TB	Tuberculosis
USAID	United States Agency for International Development
WHO	World Health Organization



## **BACKGROUND**

Moldova has one of the highest rates of tuberculosis (TB) in Eastern Europe. With assistance from the World Health Organization (WHO), the Stop TB Initiative, and the United States Agency for International Development (USAID), the Ministry of Health (MOH) is currently implementing new approaches to tuberculosis control based on the strategy recommended by WHO. The MOH, recognizing that drug supply is a crucial element of the TB control strategy, sought assistance in improving TB drug management. The Rational Pharmaceutical Management Plus Program (RPM Plus) conducted a drug management information system assessment in 2002, which led to a policy workshop on strengthening the TB Drug Management Information System (DMIS) held in 2003. Subsequently, the National Tuberculosis Control Program (NTP) and RPM Plus established a set of pharmaceutical indicators for monitoring purposes and RPM Plus is assisting with the integration of these into the MOH's software application for monitoring and evaluation of health programs (funded by the Global Fund to Fight AIDS, Tuberculosis and Malaria [GFATM]).

In support of the DOTS project, Moldova has been awarded a grant from the Global Drug Facility (GDF) for first line anti-TB drugs for three years. In addition, in July 2004 the government submitted an application to the Green Light Committee (GLC) for support with a DOTS-Plus program, for the treatment of multidrug-resistant tuberculosis cases (MDR-TB), including with the procurement second-line pharmaceuticals. RPM Plus assisted the NTP with the drafting of the supply component of the GLC application. To help prepare the NTP to implement the DOTS Plus project and with the agreement of the MOH, RPM Plus planned a training course on Pharmaceutical Management for Multi-Drug-Resistant Tuberculosis in Chisinau on December 6-10, 2004, in collaboration with the GLC and Partners-in-Health. The course has been designed for experts who are or will be directly involved in one or more phases of the MDR-TB pharmaceutical management system, in particular those responsible for strategic planning in national TB programs, for estimating needs, and the procurement and distribution of anti-TB medicines.

As it was planned to conduct this course in Russian, participation was extended to representatives of NTPs from other countries in the regions.

### **Purpose of Trip**

The purpose of the trip was to carry out a regional training course on Pharmaceutical Management for MDR-TB. The goal of the course was to strengthen the National TB Programs of Moldova and other participating countries through providing information and developing skills that are useful for planning and implementing the pharmaceutical management component of a DOTS Plus Project. During the course the implications of a DOTS Plus Project

on all aspects of pharmaceutical supply management, including selection, procurement, distribution, use, and quality assurance, would be discussed, and practical exercises using data from each country would be completed.

### **Scope of Work**

Scope of work for Susanna Khachatryan for this visit was as follows:

- Organize and direct the training course
- Facilitate a number of sessions including session on Introduction to the Drug Management Cycle, the course overview, Monitoring session, field visit exercise, and Quantification session
- Lead a team of facilitators
- Coordinate with international collaborators, including GLC and PIH

Scope of work for Edgar Barillas for this visit is as follows:

- Facilitate the Procurement and Distribution sessions
- Provide technical support during the course.

## ACTIVITIES

### 1. Pharmaceutical Management of Multi-drug Resistant Tuberculosis Course

Susanna Khachatrian and Edgar Barillas of the RPM Plus program, Rita Seicas, RPM Plus Consultant in Moldova, Michael Rich of the WHO (also represented Partners-in-Health), and Fabienne Jouberton of the WHO/Stop TB Partnership facilitated the workshop. Thus, the workshop was a team effort, which proved to enhance the quality and outcomes of the training.

The workshop gave an opportunity for key staff, who are or will be responsible for aspects of pharmaceutical management of TB medicines, including those second-line TB drugs that the NTP is planning to procure through GLC, to discuss critical drug management issues together. A total of 15 participants attended the workshop. The participants from Moldova included drug procurement experts from the Ministry of Health; drug regulation expert from the National Institute of Pharmacy, experts from the National Institute of Pneumology and National TB Program, including the newly appointed NTP Coordinator, NTP clinical specialists and monitoring experts, specialists responsible for drug management; the Head of the pharmacy of the National Institute of Pneumology; experts from the penitentiary system; representative of Caritas Luxemburg Foundation (an NGO involved in the TB/MDR-TB program in the Moldovan penitentiary system; as well as the GFATM project coordinator and monitoring specialist. In addition others, the Director of Institute of Pneumology and the monitoring expert from Caritas, joined the workshop for selected sessions as observers (see Appendix 2 of the attached Course Proceedings for the complete list of participants).

A MDR-TB specialist from Project HOPE Central Asian Republics, who works both in Uzbekistan and Kazakhstan, and two TB supervisors from Mongolia also attended. The experiences shared by these participants was an important contribution to the course and allowed for exchange of the lessons learned and discussion of current challenges in the respective countries.

The course included presentations, group discussions and activities, and field visits to institutions involved in pharmaceutical management of MDR-TB in Moldova. During the last day of the course the participants presented the results of their visits along with recommendations to improve the performance of the pharmaceutical management system. The proceedings of the course are attached in Annex 2 of this report, and include brief descriptions of the sessions, the prime areas of discussion and the key issues raised by the participants.

Upon completion of the course, participants were asked to evaluate the workshop, and complete anonymous evaluation forms. Review of the evaluation forms indicated that the participants benefited from learning concepts and the

tools provided during the training and the newly acquired skills will be useful for their future work performance. Overall the workshop was evaluated highly by the participants (see appendix 3 of the Course Proceedings).

## **2. Brief officials from USAID representative office in Moldova.**

During the workshop, Susanna Khachatryan and Edgar Barillas met with Diana Cazacu of the USAID office in Moldova. Diana Cazacu observed the workshop on Dec 10, 2004 and characterized the training as “interactive”. It was discussed by Susanna Khachatryan and Diana Cazacu that the follow-up activities will be developed upon receiving GLC’s response to the country’s application for second-line TB drugs. Currently, the country has to respond to a list of questions raised by GLC/WHO to the original application. If the country does not receive an approval from GLC and decides to procure the drugs independently, further technical assistance with procurement may be needed. If the procurement is carried out through GLC mechanism, the technical assistance can be focused on components of pharmaceutical management other than procurement (quality assurance, distribution, use etc). In addition, as suggested by Diana Cazacu, Susanna Khachatryan planned a meeting with the GFATM representatives to discuss further follow-up activities in the country.

## **3. Meetings with the organizations involved in the TB field in Moldova**

- *Meeting with Dr. Viorel Soltan, American International Health Alliance (AIHA).* During the meeting, the activities of AIHA and RPM Plus in Moldova were discussed, including the development of information systems to monitor TB program performance.
- *Meeting with Dumitru Laticevschi, GFATM Project Manager, Laurentiu Ionesii, Procurement Specialist, Project Coordination Unit.* RPM Plus Senior Program Associate and GFATM Project Manager discussed the areas of pharmaceutical management that need strengthening, as well as possible follow-up activities for RPM Plus following the workshop. These areas and activities included TB drug Quality Assurance (QA) and technical assistance to introduce QA methods, technical assistance in drug procurement issues (identifying the best cost-effective procurement methods for the country), and operational research (measuring the impact of incentives on treatment outcomes of primary TB patients; assessment of TB treatment practices in the country etc.). The potential for collaboration between RPM Plus and the GFATM project on operational research to evaluate the impact of incentives was discussed. If undertaken the research would need to be scheduled after the summer 2005 (a required number of months after the treatment completion date)

and without any financial or and human resources support from the GFATM project.

### **Collaborators and Partners**

RPM Plus conducted the workshop in collaboration with the WHO/Stop TB Partnership and Partners-in-Health. The description of skills and expertise brought by each partner organization is provided below.

Fabienne Jouberton, Technical Officer, Stop TB Partnership/WHO, presented GLC procurement mechanism and responded the questions of participants regarding the role of GLC.

Dr. Michael Rich, WHO/ PIH, conducted the session on Selection of Pharmaceuticals for MDR-TB Treatment, and the session on Selection of Agents to Manage Adverse Effects. During these sessions, Dr. Rich reflected the lessons learned in other countries, including Russia and Peru, of which he has first-hand knowledge.

Rita Seicas, local RPM Plus consultant, facilitated the session on Quality Assurance and organized the administrative arrangements for the workshop.

The GFATM office in Moldova kindly made hotel reservations for participants and facilitators, and Caritas Luxemburg provided airport pickup for facilitators and participants. GFATM also provided a laptop to be used by participants for preparing Power Point presentations.

Collaborative work and a good relationship with the partners made the workshop a successful team effort.

### **Adjustments to Planned Activities and/or Additional Activities**

No adjustments for the program were required.



## **NEXT STEPS**

### **Immediate Follow-up Activities**

- RPM Plus will continue its involvement in the development and implementation of the pharmaceutical management component of the information system for the National TB Program.
- RPM Plus will distribute copies of a translated issue of TB Manager (in Russian) to experts involved in the TB and drug management fields in the country
- Further steps are pending on GLC approval for the country's application for second line TB drugs: if the GLC approves the country's application, further assistance can be provided through introducing quality assurance methods and assistance with drafting a distribution plan. In case the GLC application is not approved, and the country decides to proceed with the second line drug procurement, technical assistance in TB medicines procurement area will be needed in the country.

### **Recommendations**

It is recommended that current efforts in Moldova would continue to be focused on implementing pharmaceutical management component of the information system in collaboration with local and international partners and counterparts involved in the development of the surveillance system in Moldova.

### **Agreement or Understandings with Counterparts**

RPM Plus will continue to coordinate its TB activities with local and international organizations in Moldova and carry out collaborative activities aimed at strengthening TB supply management for the DOTS and, in the future, DOTS Plus programs, supported by Rita Seicas, MSH Consultant, through on-site technical support in pharmaceutical management.

RPM Plus will work in collaboration with GFATM Project Coordination Unit Monitoring Specialist to provide an input for further development and implementation of the pharmaceutical management component of information system. RPM Plus will also provide technical support for the Moldovan counterparts in revising their application to GLC/WHO.



## ANNEX 1. REQUEST FOR COUNTRY CLEARANCE

TO: Vasile Filatov, USAID/Moldova

FROM: Management Sciences for Health (MSH) Rational Pharmaceutical Management Plus (RPM Plus) Program

SUBJECT: Travel of MSH/RPM Plus Senior Program Associates, Susanna Khachatryan and Edgar Barillas, to Chisinau, Moldova from December 4 to December 11, 2004. RPM Plus Cooperative Agreement No.: HRN-A-00-00-00016-00

COPY: Anthony Boni/ Global HSPR/CTO RPM Plus  
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1. The RPM Plus Program requests country clearance for MSH/RPM Plus Senior Program Associates Susanna Khachatryan and Edgar Barillas to Chisinau, Moldova from December 4 2004 to December 11, 2004.
2. Background:

Moldova has one of the highest rates of tuberculosis (TB) of the former Republics of the USSR. With assistance from the World Health Organization (WHO), the Stop TB Initiative, and USAID, the Ministry of Health (MOH) is currently implementing new approaches to tuberculosis (TB) control based on WHO recommendations. The MOH, recognizing that drug supply is a crucial element of the TB control strategy, sought assistance in improving TB drug management. RPM Plus conducted a drug management information system assessment in 2002, which led to a policy workshop on strengthening the TB Drug Management Information System (DMIS) held in April 2003, after which RPM Plus developed a set of steps for consideration by the MOH and National Tuberculosis Program (NTP). The NTP and RPM Plus identified a set of pharmaceutical indicators and discussed integrating these with the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) project's planned monitoring and evaluation (M&E) system.

Moldova has been awarded a third year's grant from the Global Drug Facility for first line anti-TB drugs. In addition, following discussions internally concerning the growing problem of multi-drug resistant TB and a hiatus in the treatment program, the government submitted a successful application to the Green Light Committee (GLC) for second line pharmaceuticals. The country currently needs assistance with the pharmaceutical management of second line TB drugs. Upon request of the MOH, RPM Plus will be carrying out a training course on Pharmaceutical Management for Multi-Drug-Resistant Tuberculosis (MDR-TB) in Chisinau on December 6-10, 2004, in collaboration with the GLC and Partners-in-Health. This course is a regional initiative, and experts from Moldova will be joined by participants from Central Asian Republics and Mongolia. The course is designed for experts who are/will be directly involved in one or more phases of the MDR-TB pharmaceutical supply management system, in particular those responsible for strategic planning in national TB programs, estimating needs, procurement and supply of TB pharmaceuticals. The participants from Moldova include experts from the Ministry of Health, National TB Institute, NTP, GFATM officer, and monitoring specialist, Pharmaceutical Committee, as well as participants working in the penitentiary system (local experts, Medical Officer of Caritas).

3. Purpose of Proposed Visit:

Carry out the training course on Pharmaceutical Management for MDR-TB with collaboration of RPM Plus local consultant. The goal of the course is to provide information and develop skills that are useful for planning and implementing the pharmaceutical management component of a DOTS Plus Project. During the course, discuss the implications of a DOTS Plus Project in all aspects of pharmaceutical supply management, including selection, procurement, distribution, use, and quality assurance. Implement practical exercise using the countries' data.

4. Scope of work for Susanna Khachatryan for this visit is as follows:

- Organize the training course
- Facilitate a number of sessions including introductory session, session on Overview of the Drug Management Cycle, Monitoring session, field visit exercise, and Quantification session
- Coordinate with international collaborators, including GLC and PIH

5. Scope of work for Edgar Barillas for this visit is as follows:

- Facilitate Procurement and Distribution sessions
- Provide technical support during the course.

6. Anticipated contacts: Mr. Vasile Filatov (USAID/Moldova); Dr. Turcanu, First Vice Minister and other officials and specialists from the Moldovan Ministry of Health; Dr. Sain, (National TB Program); Professor Sofroni (National TB Institute); Dr. Dumitru Laticevschi, GFATM, and other donor agencies and country program representatives.
7. Logistics: Susanna Khachatrian will arrive in Chisinau on Saturday December 4, 2004 and depart Moldova on Saturday December 11, 2004. Edgar Barillas will arrive in Chisinau on Sunday December 5, 2004, and depart Moldova on Saturday December 11, 2004. No Mission assistance is required.
8. Funding: The training course will be covered by USAID/Moldova Mission and E&E Regional funds. Participation of the experts from countries other than Moldova will be covered by other sources of funding.
9. Action: Please advise Anthony Boni of country clearance for Susanna Khachatrian and Edgar Barillas to travel to Moldova as planned. Please reply via e-mail to the attention of Anthony Boni, USAID/G/PHN/HN/HPSR tel. (202) 712-4789, fax (202) 216-3702, e-mail address [aboni@usaid.gov](mailto:aboni@usaid.gov). Please send carbon copies to Kama Garrison, Kgarrison@usaid.gov, Andrey Zagorskiy at [azagorskiy@msh.org](mailto:azagorskiy@msh.org), Susanna Khachatrian at [skhachatrian@msh.org](mailto:skhachatrian@msh.org), Edgar Barillas at [ebarillas@msh.org](mailto:ebarillas@msh.org), Douglas Keene at [dkeene@msh.org](mailto:dkeene@msh.org), David Smallwood at [dsmallwood@msh.org](mailto:dsmallwood@msh.org), and Meriel Jimenez at [mjimenez@msh.org](mailto:mjimenez@msh.org).

Thank you in advance for Mission cooperation.



## **ANNEX 2. COURSE PROCEEDINGS**

### **Introduction**

Moldova initiated a DOTS program in 2002 which covered the whole of the country by 2004. In support of the DOTS project, Moldova has been awarded a grant from the Global Drug Facility (GDF) for first line anti-TB drugs for three years. In addition, in July 2004 the government submitted an application to the Green Light Committee (GLC) for support with a DOTS-Plus program, for the treatment of multidrug-resistant tuberculosis cases (MDR-TB), including with the procurement second-line pharmaceuticals. RPM Plus assisted the NTP with the drafting of the supply component of the GLC application. To help prepare the NTP to implement the DOTS Plus project and with the agreement of the MOH, RPM Plus planned a training course on Pharmaceutical Management for Multi-Drug-Resistant Tuberculosis in Chisinau on December 6-10, 2004, in collaboration with the GLC and Partners-in-Health. The course has been designed for experts who are or will be directly involved in one or more phases of the MDR-TB pharmaceutical management system, in particular those responsible for strategic planning in national TB programs, for estimating needs, and the procurement and distribution of anti-TB medicines.

This course was a regional initiative and experts from Moldova were joined by participants from MDR-TB programs in Uzbekistan and Mongolia.

### **Aim of the Course**

The goal of the course was to strengthen the national tuberculosis control programs of Moldova and other participating countries through providing information and developing skills that are useful for planning and implementing the pharmaceutical management component of a DOTS Plus Project. The objectives of the course were to discuss the implications of a DOTS Plus Project on all aspects of pharmaceutical supply management, including selection, procurement, distribution, use, and quality assurance, and complete a practical exercise using data from each of the countries.

### **Course Activities**

The activities opened on December 6 at the Dedeman Hotel in Chisinau with the attendance of 15 participants. The participants from Moldova included drug procurement expert from the MOH; drug regulatory expert from the National Institute of Pharmacy, experts from the National Institute of Pneumology and NTP, experts from the penitentiary system; Medical Officer Prison TB/HIV project in Moldova of the Caritas Luxembourg Foundation, involved in the TB/MDR-TB

program in the penitentiary system in Moldova; as well as the GFATM Project Coordinator and Monitoring Specialist. Several other local counterparts joined the workshop for selected sessions as observers. Participants from other countries included MDR-TB specialist from Project HOPE, Central Asian Republics, and two supervisors from Mongolia. The experience shared by these participants was an important contribution to the course and allowed for an exchange of lessons learned and discussion of current challenges in the respective countries.

The program of the course, which is available in Appendix 1, consisted of interactive didactic presentations and practical exercises. The topics covered during the course included selection of pharmaceuticals for MDR-TB and selecting medicines for managing adverse effects, procurement, procurement through the GLC mechanism, quantification of drug needs, distribution, use, quality assurance, and monitoring. During the course, participants were given ample time to discuss pharmaceutical management problems encountered in the respective National TB programs, and explore options to address them. The participants also had the opportunity to discuss cross-cutting pharmaceutical management issues within a multidisciplinary group of experts working in different areas of pharmaceutical management (clinicians, procurement officers, pharmacists, monitoring specialists etc).

The participants were provided with a binder of handouts and other materials for each session. Most of the sessions included practical exercises during the session or upon completion of each presentation.

### **Summary of Session Content**

- **Welcome and introduction to the course, participants and presenters and Goals and objectives of the course:** Dr. Turcanu, First Deputy Minister of Health, and Dr. Sofroni, Director of National Institute of Pneumology, opened the workshop and stressed the importance of the training for enabling the NTP to effectively manage second line TB medicines.

The organizer of the workshop, Senior Program Associate Susanna Khachatryan, and co-facilitators, Senior Program Associate Edgar Barillas and MSH consultant, Rita Seicas, were introduced. After the opening remarks and the self-introduction of each of the participants, they shared their expectations of the course. A complete list of the participants is included the next section.

- **Session 1: Introduction to Management of TB Medicines and Supplies:** In this session the participants were presented with an overview of the pharmaceutical management cycle, emphasizing the close relationship between the components. After the presentation the

participants presented and discussed their participation on the different components of pharmaceutical management and the current challenges to improve pharmaceutical management in their respective working areas.

- **Session 2: Selection:** Michael Rich, who has valuable experience in several DOTS Plus country programs, presented the sessions “*Selection of Pharmaceuticals for MDR-TB and Use of medicines to treat adverse reactions*”. In the first session, Dr. Rich outlined the factors to consider in selecting 2<sup>nd</sup>-line medicines, described the progress and success in a number of projects worldwide, and explained the principles of DOTS-Plus regimen design, illustrating these with clinical case examples. He then led a discussion of the selection of medicines to manage the side effects of second-line drugs.
- **Session 3: Quality Assurance:** This session outlined the importance of good selection, procurement and distribution practices in a comprehensive quality assurance program, particularly when laboratory facilities are not reliable or immediately available. At the end of the presentation the participants analyzed, using a check list that RPM Plus provided, the procedures in place to guarantee the quality of second line drugs within their country.
- **Session 4: Procurement:** This session presented the different competitive and non competitive modalities to purchase second line TB medicines, and medicines for the treatment of adverse drug reactions. During the exercise that followed the presentation, the working groups analyzed Moldova’s pharmaceutical procurement system and the prices of second line medicines. They compared the prices of the last tender with average international prices<sup>1</sup> and the prices offered by the GLC.
- **Session 5: Distribution:** The different components of the distribution cycle (port clearance, storage, inspection, transportation, and inventory control) were explained. In the final exercise of this session, the participants prepared a flowchart to understand Moldova, Mongolia and Uzbekistan public distribution system, according to different options ( decentralized vs. centralized; public vs. private; push vs. pull ordering; delivery vs. pick-up transportation; etc.,)
- **Session 6: Monitoring and Evaluation:** Special attention was given to the utilization of drug management indicators for monitoring TB program performance to ensure an uninterrupted supply of quality TB drugs. RPM Plus introduced a list of potential indicators to participants that can be used by TB programs to monitor their performance of the pharmaceutical management component of the NTP. The facilitator emphasized the

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<sup>1</sup> From MSH’s International Drug Price Indicator Guide.

importance for a DOTS Plus Project, of a well designed monitoring system based on indicators.

- **Session 7: Introduction to the GLC procurement mechanism:** Fabienne Jouberton, of the GLC secretariat in Geneva, presented the session. She explained the basic mechanism by which the country programs can purchase quality MDR-TB medicines from the GLC at the lowest prices. The course provided the opportunity for an open discussion of the problems and potential solution when procuring through GLC.
- **MDR-TB situation in Moldova:** The presentations on “MDR-TB situation in Moldova” and “MDR-TB situation in the penitentiary system in Moldova” were provided by Dr. Crudu, Director of the National Reference Laboratory, and Dr. Valentin Laticevschi, Caritas Luxemburg, These presentations were particularly interesting for the foreign participants and for the facilitators. They also provided valuable data to support the analysis of the findings from the field visits.
- **Session 8: Quantification:** Methods to estimate the needs of drugs for standardized regimens were described in this session. It was evident, during the presentation and discussion, that the estimation of needs for empiric/ individualized regimens is complicated because of the use of multiple regimens and the difficulty to predict the consumption. As presented in this session, the best estimates should be based on the calculation of the number (or percentage) of patient receiving each medicine. After the presentation the participants practiced the methods for medicine quantification for standardized regimens.
- **Fieldwork:** Four groups were formed for the field visits: 1) Selection and Quantification; 2) Procurement and Quality Assurance; 3) Distribution and 4) Use and Availability. Following the instructions provided by the facilitator, each group carried out the following activities:
  - a. Identified the data and indicators needed in each area for monitoring purposes.
  - b. Identified the sources of information and the instruments for data collection.

The field visit was carried out in Chisinau during the fourth day of the course. The groups planned to visit the following institutions.

Group	Institution
1. Selection and quantification	<ul style="list-style-type: none"> <li>• NTP</li> <li>• Phtziopulmonology Institute</li> <li>• National Institute of Pharmacy</li> </ul>
2. Procurement and Quality Assurance	<ul style="list-style-type: none"> <li>• Pharmaceutical Department and Economical and Financial Department of the Ministry of Health</li> </ul>

	<ul style="list-style-type: none"> <li>• Laboratory of Drugs Quality Control and Certification of the National Institute of Pharmacy</li> </ul>
3. Distribution	<ul style="list-style-type: none"> <li>• Hospital Pharmacy of the Phtiziopulmonology Institute</li> <li>• Warehouse, San Farm Prim,</li> </ul>
4. Use and Availability	<ul style="list-style-type: none"> <li>• Phtiziopulmonology Institute 2</li> <li>• Clinical Diagnostic Center, sector Botanica, municipality of Chisinau</li> </ul>

Following the visits and data collection, the participants assembled at the Dedeman Hotel to process and analyze the information, and to prepare a presentation which included their main findings and the weaknesses and strengths of the system.

- **Group work—analyze data, prepare presentation of findings and recommendations:** Upon completion of the visit, the participants developed Power Point presentations outlining areas for improvement in each component of pharmaceutical management cycle based on selected tools and methodology utilized to determine key pharmaceutical management indicators.

The results of the field work and recommendations for improvement were presented during the morning of the fifth day of the course. During the presentations the participants outlined and discussed, based on the field visits, areas of the information system that could be strengthened. For instance, lack of integration among different components of the information system, including insufficient information flow from one key player to another (e.g., Ministry of Health and Institute of Phtiziopneumology), was considered to be a factor contributing towards inefficiencies with drug management (this view reinforces the findings of the RPM Plus DMIS assessment undertaken in 2002). It was recognized that there was a need to strengthen the quantification and ordering processes in order that the viability of existing stocks of anti-TB drugs at the pharmacy of the Institute be taken into account when informing the MOH of requirements. The group recognized the need (being addressed through RPM Plus technical assistance) to strengthen data collection and further develop an integrated monitoring system. It was discussed that a multidisciplinary coordination group should be established to address the gaps in current information system management.

- **Individual work—prepare country plans for Improvement**

Based on skills and knowledge obtained during the course, the participants explored how to develop work plans to address the problems and weaknesses in the pharmaceutical management of TB programs in their respective countries. These problems/weaknesses were identified by participants during the introductory session of the course. The

approaches to address these issues were discussed during the small group work on each relevant topic. The participants will finalize their work plans after the course is completed using the course materials as reference guides.

- **Individual activity-course evaluation:** Before the closing remarks of the course the participants review their expectations of the course (registered during the first day) and analyzed whether they were actually met. The overall conclusion was the expectations were progressively fulfilled during the course.

Upon completion of the course, participants were asked to evaluate the workshop, including the specific sessions and the overall course, and complete anonymous evaluation forms. Review of the evaluation forms indicated that all the participants benefited from learning concepts and the tools provided during the training and acquired skills will be useful for their future work performance. The course participants evaluated highly overall workshop, as well as specific sessions of the course. See Appendix 4 for more detail on the evaluations.

- **Closing**

During the closing remarks the facilitators thanked the participants for their dedicated work and the National TB program staff for their support in the organization of the course, particularly for the field visit. RPM Plus provided CDs to each participant containing the training session materials, check lists, questionnaires, participant presentations, various documents relating to GLC technical and program requirements for the procurement of MDR-TB drugs, websites where additional information can be obtained, and a reference document for treating MDR-TB patients prepared by Partners in Health.

## Appendix 1.: COURSE PROGRAM

**Chisinau, Moldova  
December 6-10, 2004**

<b>Day</b>	<b>Time</b>	<b>Activity</b>	
<b>Dec 6</b>	8:30-9:00	Registration	
	9:00–9:30	Welcome and introduction to the course, participants and presenters	
	9:30–9:45	Goals and objectives of the course. Program overview	
	9:45–10:00	<b>Session 1: Introduction to Management of TB Medicines and Supplies</b>	
	10:00-10:30	Group Activity	
	10:30–11:00	Break	
	11:00–12:30	<b>Session 2: Selection</b>	
	12:30–13:00	Group Activity	
	13:00–14:00	<b>Lunch</b>	
	14:00-14:30	Group Activity	
	14:30–15:30	<b>Session 3: Quality Assurance</b>	
	15:30-16:00	Break	
	16:00-17:00	Group Activity	
<b>Dec 7</b>	9:00–10:00	<b>Session 4: Procurement</b>	
	10:00–10:30	Group Activity	
	10:30-11:00	Break	
	11:00–12:00	<b>Session 5: Distribution</b>	
	12:00–13:00	Group Activity	
	13:00–14:00	<b>Lunch</b>	
	14:00–14:30	<b>Session 6: Monitoring and Evaluation</b>	
	14:30 -15:00	Instructions for the monitoring and evaluation exercise	
	15:00 -15:30	Group Activity - preparing for field visit	
	15:30 -16:00	Break	
	16:00 -17:00	Group Activity - preparing for field visit	
	<b>Dec 8</b>	9:00 -10:30	<b>Session 7: Introduction to the GLC procurement mechanism</b>
10:30 -11:00		Break	
11:00 -12:00		Review participant field visit plans/data collection instruments	
12:00-12:30		<b>MDR-TB situation in Moldova</b>	

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<b>Day</b>	<b>Time</b>	<b>Activity</b>
	12:30-13:00	Lunch
	13:00-14:00	<b>Session 8: Quantification</b>
	14:00-15:30	Group Activity
	15:30-16:00	Break
	16:00-17:00	Group Activity
<b>Dec 9</b>	9:00-13:00	<b>Fieldwork</b>
	13:00-14:00	<b>Lunch</b>
	14:00-17:00	Group work—analyze data, prepare presentation of findings and recommendations
<b>Dec 10</b>	9:00-10:30	Plenary—Groups present findings and recommendations
	10:30-11:00	<b>Break</b>
	11:00-12:00	Individual work—prepare country plans for Improvement--
	12:00-12:30	Individual activity-course evaluation
	12:30-13:00	Closing comments
	13:00-14:00	<b>Lunch</b>

## Appendix 2. CONTACT INFORMATION

### List of Participants

Name	Institution	Address	Telephone	E-mail
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**List of Facilitators**

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### Appendix 3: COURSE EVALUATION BY PARTICIPANTS

Upon completion of the workshop, participants were asked to fill out an anonymous course evaluation form. The respondents were requested to rate each category (see below) of the final evaluation using a 1-5 scale, where 5 is the best/highest rating. The evaluations were provided for the workshop in general and for each session specifically. The final evaluation form for the course included the following questions.

Course Evaluation Ratings	1	2	3	4	5
Session 1: Introduction to Pharmaceutical Management for MDR-TB	-	-	-	2	9
Session 2: Selection of second line medicines and selection of agents to	-	-	-	3	7
Session 3: Quality Assurance	-	-	-	5	6
Exercise to describe quality assurance system in participants' countries	-	-	-	5	6
Session 4: Procurement	-	-	-	5	5
Exercises to analyze procurement practices in participants' countries	-	-	1	4	6
Session 5: Distribution	-	-	-	5	6
Exercise: analyze distribution management cycle in participants' countries	-	-	-	4	8
Session 6: Monitoring	-	-	-	5	6
Exercise: participants prepare data collection instruments	-	-	1	4	7
Session 7: GLC procurement mechanism	-	1	-	1	9
Session 8: Quantification	-	-	-	1	10
Exercise: practicing quantification for own programs	-	-	-	1	10
Field Exercise	-	-	-	5	6
General Evaluation					
1. The course had importance to my future professional responsibilities	-	-	-	1	10
2. The course allowed me to better understand the concepts and use of tools to better perform my duties	-	-	-	4	7
3. The course gave me the opportunity to exchange useful experiences with participants from other countries	-	-	1	4	6
4. The theoretical content of presentations was useful and sufficient	-	-	1	3	7
5. The exercises and group activities were useful and sufficient	-	-	-	3	8
6. There was a good mix of presentations, discussions and group activities	-	-	-	6	5
7. The duration of the course was appropriate	-	-	-	4	7
8. Which three activities or sessions were most useful for you, starting from most useful? (see the summary of the responses below)					

9. Which three activities or sessions were least useful for you, starting from least useful? (see the summary of the responses below)					
10. What other subjects should have been included in the course?					
11. What suggestions do you have to improve the course? (see the responses below)					

All participants rated the course as very useful/useful in performing their work. The respondents felt that the course had importance to their future responsibilities and allowed for better understanding of the concepts and tools needed to perform their duties better. There were numerous comments such as “Everything was excellent”, “everything was wonderful”. Overall, the respondents gave “excellent” and “good” ratings for the course and had shown high level of satisfaction with the course.

The participants provided a positive feedback with regard to all practical exercises, with a specific positive emphasis on quantification exercise to estimate drug needs.

Participants found the following sessions particularly to be most useful for them:

- Quantification (8)
- Monitoring (6)
- Selection (5)
- Procurement (4)
- GLC procurement (4)

Only two respondents stated the sessions that they liked the least, including procurement, procurement through GLC mechanism, distribution (2), monitoring and quality assurance. The rest of respondents stated that they liked all the sessions and four participants stated that there was no any session that liked “the least”.

Some participants also suggested the following for further improvement/development:

- Providing more detail on empirical regimens
- Doing more practical exercise in groups
- Providing more clarity on GLC’s role in the procurement process.
- More thorough selection of participants

The participant evaluations and practical observations of the facilitators during the course will be utilized by RPM Plus in improving preparation work, training approaches and materials for further trainings.

Summary: Review of the evaluation forms had shown that the training course was timely and relevant to the situation in Moldova with regard to the

pharmaceutical management component of the DOTS Plus program, which Moldova is planning to implement. Review of the evaluation forms also indicated that all the participants benefited from learning concepts and the tools provided during the training and acquired skills will be useful for their future work performance.

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