

**Rational Pharmaceutical Management Plus**  
***Global TB Drug Facility Monitoring Mission: Trip Report***

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Robert Burn

Date April 2005

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This report was made possible through support provided by the U.S. Agency for International Development, under the terms of cooperative agreement number HRN-A-00-00-00016-00. The opinions expressed herein are those of the author(s) and do not necessarily reflect the views of the U.S. Agency for International Development.

### **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**

The Global Drug Facility (GDF) is an initiative of the Stop TB Partnership to increase access to high-quality tuberculosis drugs. The Technical Review Committee (TRC) of the GDF is responsible for reviewing grant applications and making recommendations to the WHO on necessary steps for Programs to meet conditions for GDF support. RPM Plus, as a part of its Global tuberculosis program, provides technical assistance to the GDF by participating in monitoring visits. GDF support to Moldova began in 2001 with a third year of support (usually the final year) in 2004. The monitoring team consisted of Jerod Scholten, Technical Officer Tuberculosis Control WHO Euro and Robert Burn, MSH/RPM Plus Senior Program Associate. The mission concluded that Moldova had continued to meet the GDF criteria for support, having developed a reliable network to deliver an uninterrupted drug supply on a quarterly basis around the country. It is recommended that the Ministry of Health finalise its decision to procure 1<sup>st</sup>-line anti-TB medicines through the GDF's Direct Purchase mechanism, using funding earmarked in the Global Fund Project. The Technical Agreement with the GDF should be established soonest and the financial arrangements initiated, so that the order once placed can be met without delay. Also the National Tuberculosis Control Program is recommended to purchase fixed dose combination products in blister packs to better safeguard the condition and efficacy of the pharmaceutical constituents of the tablets during distribution and dispensing to patients.

### **Recommended Citation**

Burn, Robert 2005 *Global TB Drug Facility Monitoring Mission* Submitted to the U.S. Agency for International Development by the Rational Pharmaceutical Management Plus Program. Arlington, VA: Management Sciences for Health.

### **Key Words**

Tuberculosis, national tuberculosis program, tuberculosis drugs, Global Drug Facility, monitoring, Moldova.

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## ACRONYMS

DMIS	Drug Management Information System
DMT	Drug Management Team
DOTS	Directly Observed Therapy Short-course (WHO TB Control Strategy)
DOTS Plus	WHO Strategy for multi-drug resistant tuberculosis
E&E	Europe and Eurasia (Bureau of USAID)
GDF	Global TB 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
MSH	Management Sciences for Health
NTP	National Tuberculosis Program
PCU	Project Coordination Unit
RPM Plus	Rational Pharmaceutical Management Plus Program [MSH]
TB	Tuberculosis
TRC	Technical Review Committee (of the GDF)
USAID	United States Agency for International Development
WHO	World Health Organization

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## **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) established a DOTS program in 2002. RPM Plus has been working with the National Tuberculosis Control Program to strengthen the drug management information system (DMIS) for first line anti-TB drugs.

The Global TB Drug Facility (GDF) is an initiative of the Stop TB Partnership to increase access to high-quality tuberculosis drugs. The aim of the GDF is to provide drugs for 10 million patients in five years, and to treat 45 million patients over a 10-year period. The Technical Review Committee (TRC) of the GDF is responsible for reviewing grant applications to the GDF. The GDF TRC makes recommendations to the WHO on necessary steps for Programs to meet conditions for GDF support. One component of this review and recommendation process is a country visit. RPM Plus, as a part of its Global tuberculosis program, collaborates at the GDF's request through the provision of technical assistance by participating in a number of country monitoring visits.

GDF support is provided in principle for a three year period, subject to availability of resources and satisfactory compliance with GDF conditions of support. GDF support to Moldova began in 2001. The monitoring team consisted of Jerod Scholten, Technical Officer Tuberculosis Control WHO, Robert Burn, MSH/ RPM Plus Senior Program Associate and Ms. Rita Seicas, MSH Consultant.

In July 2004, the Ministry of Health applied to the Green Light Committee (GLC) of the WHO for support for a DOTS Plus project to treat multi-drug resistant TB (MDR-TB) cases and the application was approved, following revision, in February 2005. During technical assistance activities in FY03, RPM Plus applied the concept of a patient package of anti-TB drugs to the management of pharmaceuticals for the treatment of MDR-TB cases. RPM Plus is working closely with the central unit of the NTP and the MDR-TB department, both located within the Institute of Phthisiopneumology in Chisinau, to determine the operational requirements for this system, and to provide appropriate technical assistance.

### **Purpose of Trip**

MSH/RPM Plus Senior Program Associate Robert Burn visited Chisinau, Moldova from April 3-13, 2005 to provide:

- a. Technical assistance to the WHO to undertake the final year monitoring mission in Moldova on behalf of the Global Drug Facility.
- b. Technical coordination of RPM Plus activities with the National Tuberculosis Control Program and the Ministry of Health.

### **Scope of Work**

As a member of the Global TB Drug Facility monitoring mission team:

- Assess adherence to GDF terms and conditions of support.
- Review program management (including case finding and treatment outcomes), financial management and drug management.
- Assess the TB drug procurement plan following the initial 3 year grant.
- Assess issues raised by the GDF TRC or during previous GDF country visits and/or monitoring missions.

For the RPM Plus/Moldova program:

- Follow-up on discussions held and plans prepared during previous technical coordination trip (February/March 2005)
- Brief/debrief the USAID Mission on the RPM Plus Program activities in Moldova

## ACTIVITIES

### 1. Global TB Drug Facility monitoring mission

The Global TB Drug Facility monitoring mission to Moldova took place from the 4<sup>th</sup> to 9<sup>th</sup> April 2005. The mission team consisted of Mr. Jerod Scholten from the WHO Euro Office for TB, Ms. Rita Seicas, MSH consultant, and MSH/RPM Plus Senior Program Associate, Mr. Robert Burn. In addition to meeting with representatives of government institutions and other organizations involved in the tuberculosis control program the team visited TB health facilities in Hincesti, Chisinau and Ciocana rayon (see Annex 2 for the list of persons met).

The GDF requires that the monitoring team complete a standard checklist in order to assess adherence to GDF terms and conditions of support, review program management (including case finding and treatment outcomes), financial management and drug management, and assess issues raised by the GDF TRC or during previous GDF country visits and/or monitoring missions. The GDF had provided a grant of anti-TB drugs to the Moldovan National Tuberculosis Control Program for three years, in accordance with the usual grant agreement. Although a second period of support can be considered by the GDF it is expected that grantees will use the three years of support become self-sufficient by establishing mechanisms and funding to maintain continuity of supply. Moldova will be financing 1<sup>st</sup>-line drug procurement through the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) Project for the next two years.

The final report of the team visit is attached as Annex 3. In summary, the team found that:

- the NTP was in compliance with GDF terms and conditions;
- funding is available for the immediate future (2005 and 2006);
- in general the distribution system functioned satisfactorily, though there had been a short stock out of Pyrazinamide at the central level, compensated for by local purchases;
- issues raised during the previous monitoring visit had been addressed;
- was improved notification of smear positive cases and treatment success;
- Strengthening of the programme is still needed to increase the treatment success to at least 85%;

The team debriefed Dr. Sain at the conclusion of the visit, in particular stressing the importance of following up with the Ministry of Health and the GFATM Project Coordination Unit (PCU) on progress with the direct procurement of 1<sup>st</sup>-line anti-TB drugs through the GDF mechanism to ensure that the next supply arrives in country prior to the depletion of existing stocks. And also strongly recommending that the 1<sup>st</sup>-line drugs be purchased in blister packaging (not loose in large bottles) to minimize the effects of handling on drug quality during the distribution and dispensing process.

2. RPM Plus/Moldova program:

- Follow-up on discussions held and plans prepared during previous technical coordination trip (February/March 2005)

During March RPM Plus finalized the draft of the terms of reference for the Drug Management Team (DMT) and shared these with Dr. Sofronie, Head, Institute of Phthisiopneumology. This resulted in the Drug Management Team being formally established through appropriate official regulation and the MSH/RPM Plus consultant in country, Rita Seicas, met with the likely members of the team to explain the concept and purpose of the team and each individual's responsibilities. Senior Program Association, Robert Burn and Ms. Seicas met with Dr. Sain and agreed to schedule a first meeting of the team during the week beginning 25<sup>th</sup> April.

Dr. Sofronie had also raised the matter of developing the capacity of the Drug Management Team to assure the supply of medicines to the DOTS and DOTS Plus projects and RPM Plus will assess and consider to what extent and how best this can be addressed.

Also during March RPM Plus drafted the description of the patient package distribution scheme for 2<sup>nd</sup>-line drugs for MDR-TB treatment and begun to prepare comprehensive instructions for the implementation of the scheme. The draft was shared with the NTP. It was planned that this subject would be one of the first items for the DMT to discuss by identifying modifications, issues for clarification and resolving these.

- Brief/debrief the USAID Mission on the RPM Plus Program activities in Moldova

The RPM Plus team met with Ms. Diana Cazacu, Program Assistant, and briefed her on the preliminary assessment of the monitoring mission (as outlined above). In particular it was highlighted that the main implications for the national tuberculosis control program is that procurement would now be managed by the NTP, MOH and GFATM PCU. The responsibility for timely action to initiate and follow-up on procurement clearly now resides with the NTP. Collaboration with the Institute of Phthisiopneumology/NTP in establishing and capacitating the Drug Management Team was therefore a key direction for the RPM Plus Program in Moldova over the next months.

During March RPM Plus, together with the chief of the MDR-TB department of the TB institute and the NTP coordinator, had estimated the quantity of drugs required for the treatment side effects (of 2<sup>nd</sup> line drugs) and the initial order

quantities. The International Dispensary Association<sup>1</sup> procurement mechanism (timeline, scheduling of shipments, and documentation) were discussed in order that this was fully understood and all steps taken to facilitate the ordering and receipt of the pharmaceuticals. Additionally, RPM Plus prepared the draft of order for 2<sup>nd</sup>-line anti-TB drugs and drugs for adverse reactions according to the requirements of the GLC Letter of Agreement and presented this to the NTP for review and action. Ms. Seicas, the MSH/RPM Plus consultant in Moldova is continuing to maintain a close relationship with the NTP and the GFATM PCU to facilitate these procurement activities.

### **Collaborators and Partners**

Dr. Dumitru Sain, Manager National Tuberculosis Control Program  
Mr. Jerod Scholten, WHO Euro TB  
Ms. Rita Seicas, MSH/RPM Plus consultant.

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

Although the GDF had agreed with the NTP Manager on the dates for the GDF monitoring mission and indicated the stakeholders that would need to be consulted, little progress had been made on scheduling meetings. The RPM Plus team therefore worked with Dr. Sain to establish a program of meetings and field visits in preparation for the second GDF monitoring team member's arrival in Moldova.

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<sup>1</sup> The International Dispensary Association (IDA) is the Green Light Committee's procurement agent and the purchase of 2<sup>nd</sup>-line anti-TB drugs (and pharmaceuticals to manage adverse reactions) at the GLC's concessionary prices is arranged with the IDA.



## **NEXT STEPS**

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

1. Assist Mr. Scholten to finalize the GDF Monitoring Mission report for submission to the Global TB Drug Facility secretariat.
2. Assist the NTP to plan the agenda for the first meeting of the Drug Management Team.
3. With the NTP finalize the description of the patient package distribution scheme for 2<sup>nd</sup>-line anti-TB drugs.

### **Recommendations**

The GDF Monitoring Team recommended that the NTP/MOH:

1. The Ministry of Health is recommended to finalize its decision to procure first line anti-TB medicines through the Direct Purchase mechanism, using funding earmarked in the Global Fund Project. The Technical Agreement with the GDF should be established soonest and the financial arrangements initiated, so that the order once placed can be met without delay. There is some urgency in implementing this activity given the current level of stocks.
2. The NTP is recommended to purchase fixed dose combination products in blister packs to better safeguard the condition and efficacy of the pharmaceutical constituents of the tablets during distribution and dispensing to patients.

RPM Plus should assign a high priority to build up capacity within the recently created Drug Management Team (at the Institute of Phthisiopneumology) to systematically organize and implement the drug management activities supporting the DOTS and DOTS Plus projects.



## 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 Associate Robert Burn, to Chisinau, Moldova from April 3-13, 2005. RPM Plus Cooperative Agreement No.: HRN-A-00-00-00016-00

COPY: Anthony Boni/ Global HSPR/CTO RPM Plus  
Kama Garrison/USAID/Washington  
D'Arcy Richardson, USAID/Washington  
Julia Wallace/ USAID E&E Bureau  
Diana Cazacu, USAID/Moldova  
Olena Radziyevska, USAID/Ukraine  
Veronica Mihailiuc, USAID/Moldova  
Douglas Keene, Director, MSH/RPM Plus Program  
Maria Miralles, Deputy Director, MSH/RPM Plus Program  
Andrey Zagorskiy, Project Manager for TB, MSH/RPM Plus Program

1. The RPM Plus Program requests country clearance for MSH/RPM Plus Senior Program Associate Robert Burn to Chisinau, Moldova from April 3-13, 2005.

2. Background:

Moldova has one of the highest rates of tuberculosis (TB) within 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) established a DOTS program in 2002. RPM Plus has been working with the National Tuberculosis Control Program to strengthen the drug management information system (DMIS) for first line anti-TB drugs. Moldova has received three years' support from the Global Drug Facility (GDF) in the form of first-line anti-TB medicines and will need to consider transitioning from this grant to locally financed and managed procurement.

The Global Drug Facility is an initiative of the Stop TB Partnership to increase access to high-quality tuberculosis drugs. The aim of the GDF is to provide drugs for 10 million patients in five years, and to treat 45 million patients over a 10-year period. The Technical Review Committee (TRC) of the GDF is responsible for reviewing grant applications to the GDF. The GDF TRC makes recommendations

to the WHO on necessary steps for Programs to meet conditions for GDF support. One component of this review and recommendation process is a country visit. RPM Plus, as a part of its Global tuberculosis program, was asked to provide technical assistance to the GDF by participating in a number of country visits.

GDF support is provided in principle for a three year period, subject to availability of resources and satisfactory compliance with GDF conditions of support. GDF support to Moldova began in 2001. The monitoring team will consist of Jerod Scholten, Technical Officer Tuberculosis Control WHO and Robert Burn, MSH/RPM Plus Senior Program Associate.

In July 2004, the Ministry of Health applied to the Green Light Committee (GLC) of the WHO for support for a DOTS Plus project to treat multi-drug resistant TB cases and the application was approved, following revision, in February 2005. During technical assistance activities in FY03, RPM Plus applied the concept of a patient package of anti-TB drugs to the management of pharmaceuticals for the treatment of MDR-TB cases. RPM Plus is working closely with the central unit of the NTP and the MDR-TB department, both located within the Phthisiopneumology Institute in Chisinau, to determine the operational requirements for this system, and to provide appropriate technical assistance.

3. Purpose of Proposed Visit:

- c. Technical assistance to the WHO to undertake the final year monitoring mission in Moldova on behalf of the Global Drug Facility.
- d. Technical coordination of RPM Plus activities with the National Tuberculosis Control Program and the Ministry of Health.

4. Scope of work for Robert Burn for this visit is as follows:

As a member of the Global TB Drug Facility monitoring mission team:

- Assess adherence to GDF terms and conditions of support.
- Review program management (including case finding and treatment outcomes), financial management and drug management.
- Assess the TB drug procurement plan following the initial 3 year grant.
- Assess issues raised by the GDF TRC or during previous GDF country visits and/or monitoring missions.

For the RPM Plus/Moldova program:

- Brief/debrief the USAID Mission on the RPM Plus Program activities in Moldova

- Follow-up on discussions held and plans prepared during previous technical coordination trip (February/March 2005)

5. Anticipated contacts:

USAID/Moldova (Mr. Mark Levinson, Mr. Vasile Filatov); officials and specialists from the Moldovan Ministry of Health (Dr. Turcanu, First Vice Minister); National TB Program (Dr. Sain); National TB Institute (Dr. Sofronie); donor agencies and representatives of their programs in the country (Dr. Dumitru Laticevschi, GFATM), RPM Plus local consultant (Rita Seicas).

6. Logistics:

Robert Burn will arrive in Chisinau on Sunday, April 3, 2005 and depart Moldova on Wednesday February 13, 2005. No Mission assistance is required.

7. Funding:

The in-country RPM Plus work will be paid for with USAID/Moldova Mission funds. RPM Plus participation in the GDF monitoring visit is supported with USAID Global Funds.

8. Action:

Please advise Anthony Boni of country clearance for Robert Burn 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, or e-mail address [aboni@usaid.gov](mailto:aboni@usaid.gov). Please send carbon copies to Kama Garrison at [kgarrison@usaid.gov](mailto:kgarrison@usaid.gov), Andrey Zagorskiy at [azagorskiy@msh.org](mailto:azagorskiy@msh.org), Robert Burn at [rburn@msh.org](mailto:rburn@msh.org), Douglas Keene at [dkeene@msh.org](mailto:dkeene@msh.org), Maria Miralles at [mmiralles@msh.org](mailto:mmiralles@msh.org) and Meriel Jimenez at [mjimenez@msh.org](mailto:mjimenez@msh.org).

Thank you in advance for Mission cooperation.



## ANNEX 2: PERSONS MET DURING TDY

Organisation	Name and Position
Ministry of Health	Dr. Gheorghe Turcanu, First Vice Minister
National Tuberculosis Control Programme/ Institute of Phthisiopneumology	Dr. Silviu Sofronie, Head Dr. Dumitru Sain, Manager National Tuberculosis Control Program Dr. Constantin Iavorschi, Vice Director Dr. Ecaterina Axenti, Monitoring and Evaluation Department
National Institute of Pharmacy	Dr. Boris Parii, Director
Family Doctor Centre No.11, Chisinau	Dr. Aurica Molodojan Nurse Maria Matei Dr. Maria Cetulean , municipal coordinator of the TB program
Territorial Medical Association, Ciocana	Dr. Elena Cojocaru, rayonal coordinator Dr. Tamara Caluitcaea, TB physician Nurse Tatiana Borjac Nurse Nina Echimovsacaea
TB Cabinet and Hospital, Hincesti	Dr. Mihai Cocervei, rayonal TB coordinator, Dr. Miron Popa, chief of the section Nurse Valentina Ghimp
San Farm Prim	Ms. Ala Ciobanu, Vice Director, Chief of Marketing Department
Project Coordination Unit, GFATM TB/AIDS Project in Moldova	Dr. Dumitru Laticevschi, Project Manager Dr. Victor Burinschi, Monitoring and Evaluation Specialist
USAID	Ms. Diana Cazacu, Project Management Assistant
MSH/RPM Plus Consultant	Ms. Rita Seicas



**ANNEX 3: THIRD YEAR IN-COUNTRY MONITORING CHECK LIST**

THE GLOBAL TB DRUG FACILITY (Report on Monitoring Mission April 2005)

**THIRD YEAR**

**IN-COUNTRY MONITORING CHECK LIST**

**THE GLOBAL TB DRUG FACILITY**

### THIRD YEAR IN-COUNTRY MONITORING CHECKLIST

All recipients of GDF in-kind grants of first-line tuberculosis drugs agree, as a condition of support, to: *Regular assessments of program performance (including case finding & treatment outcomes), financing and drug management, to be carried out by an independent technical agency, with a complete assessment report provided to the GDF.*

This check-list will form the basis of the assessment report on the performance of GDF grantees within the **third year** of support. This report will be reviewed for completeness by an independent agent appointed by the GDF and will be submitted to the Technical Review Committee for review.

Country Visited: **Republic of Moldova**

Date: **31 March 2005 to 7 April 2005**

Data Collector(s) Name(s) (1) **Robert Burn**  
(2) **Jerod Scholten**  
(3) **Rita Seicas**

Data Collector(s) Signature(s) \_\_\_\_\_ (1)  
\_\_\_\_\_ (2)  
\_\_\_\_\_

Date report submitted to the GDF secretariat: 20/05/2005

*Note: To determine the best source of information for different questions in this checklist, ask the NTP manager. If additional pages are needed for any section of this checklist please append to this document, clearly indicating the section number to which the additional page corresponds.*

## **CONTENTS**

- Main achievements and constraints/problems in the year of the monitoring visit
- National TB program management
- Financial management
- Port clearance
- Drug registration and quality
- Stock management
- TRC recommendations
- Recommendations from the 2<sup>nd</sup> year monitoring mission
- GDF Phase Out
- Monitoring team feedback

**Main NTP achievements and problems / constraints in the year of the monitoring visit**

**1. Main achievements**

- Moldova, as of 1 January 2004, has 100 percent DOTS coverage
- Moldova has developed a reliable network to deliver an uninterrupted drug supply through GDF on a quarterly basis including the introduction of a standardized WHO supplementary report to project drug needs (quarterly report on programme management Part C – Regional level)
- Standardized 1<sup>st</sup> line treatment regimens are provided and WHO recommended trainings have improved standards of overall care
- Laboratory capacity has improved with the replacement of old monocular microscopes with new binocular ones and continuous trainings; official designation of a supranational reference laboratory; renovation of laboratory network and planned representative drug resistance survey
- GLC approved

**2. Main problems / constraints**

A brief stock shortage of PZA occurred in June-August 2004 (prior to the delivery of the last shipment of the GDF grant in September 2004). However, the NTP bought drugs through a centralized mechanism and distributed them appropriately to make up for the local shortages. Despite a 12 month buffer stock, the shortages were thought to be a result of a longer than 12 month period between shipments and the use of more PZA (based on weight rather than number of patients) than what GDF provided based on number of patients; further, the case rates have steadily increased as have the corresponding number of patients under treatment.

**National TB program management**

- 3. DOTS population coverage<sup>2</sup> at the time of the monitoring mission: 100 %**
- 4. Has the latest<sup>3</sup> annual WHO TB data collection form been submitted to WHO?**  
**YESX ; Date sent: 14 September 2004**  
**Sent by whom: Professor Dumitru Sain**
- 5. Collect the latest<sup>4</sup> four quarterly reports on case findings and treatment outcomes of the NTP in the DOTS implementing areas. Please provide comments on the data in these reports.**

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<sup>2</sup> The percentage of population living in areas where health services have adopted the DOTS strategy. The units of population covered are usually the administrative units used for other purposes within country (e.g. districts, counties, oblasts), and the outcome is usually expressed as the percentage of the national population.

<sup>3</sup> Please specify case finding, sputum conversion and treatment outcome reporting periods

<sup>4</sup> Please specify quarters for which reports were collected, analysed and reported in this checklist. Kindly forward the quarterly reports to the GDF secretariat with the monitoring checklist as these are an essential part of the monitoring mission report.

- The proportion of new pulmonary patients who were sputum smear-positive in 2004 notifications for Quarters I-IV varied between 43% and 49% with an average of 45%. This average is a significant improvement than in 2003 notifications (36%-40% smear confirmation) and likely due to DOTS expansion, training, and improved laboratory capacity.
- In 2003 treatment outcomes, the proportion of patients who had successful treatment outcomes varied between 60% (Q1) and 68% (QIV) by quarterly analysis with an average success “rate” of 66%. This is an overall improvement in treatment success than in 2002.
- Compared with the 2002 treatment outcomes, there was the same failure rates in 2003 (12% vs. 12%) but this was still much lower than failures in 2001 which accounted for 19% of cases. However, the high rate of failures in 2001 is partially artefact since a much larger proportion of 2001 cohort were prisoners (and more at risk for MDRTB) compared to 2002-2003 where most civilians were under DOTS, representing more comprehensively the overall epidemiologic situation.
- Strengthening of the programme is still needed to increase the treatment success to at least 85%

**Table 1: Case Finding (reporting period :\_2004\_\_\_\_\_)**

<b>CASE FINDING: Number of cases entered in the Register in the quarter(s) I-IV</b>		
<b>TB case category</b>	<b>Number</b>	<b>%</b>
New Smear +ve Pulmonary TB	1,536	24.4
New Smear -ve Pulmonary TB	1,824	29.0
Extra-pulmonary TB	675	10.7
Previously treated Pulmonary Smear + TB cases		
- Relapse	771	12.3
- Treatment after interruption (Defaulters)	262	4.2
- Treatment failure	410	6.5
Other cases	811*	12.9
Total	6,289	100.0

\* Includes: Transferred n=281

**Table 2: TREATMENT OUTCOMES (reporting period :  
2003\_\_\_\_\_)**

<b>TREATMENT OUTCOMES New smear + cases reported in the quarter(s)_I-IV_____</b>		
	<b>Number</b>	<b>%</b>
Total number of smear + cases reported	1,029	100%
Total number and % of cases evaluated	1,012*	98.3
- Cure	615	60.8
- Treatment Completed	53	5.2
- Died	81	8.0
- Treatment failure	124	12.3
- Default	108	10.7
- Transfer out	31	3.1
Treatment success rate: (cure + treatment completed)	668	66.0
-		

**\*Excludes n=13 still on treatment, and 4 excluded for unknown reasons.  
Proportions based on n=1,012 cohort.**

- 6. Is a recent independent assessment/review report by NTP partner available** YES   
NO

**If yes, was the report collected** YES  NO

- 7. What evidence is there that drugs provided by the NTP are only used for TB patients?**

Last year, we checked pharmacies for RIF/INH combinations at several pharmacies; we were not able to do this on this mission. However, we were reassured that the drugs were supplied only to TB patients and in fact observed the drugs in TB dispensaries. While a thorough country-wide assessment could not be conducted, we do not suspect (based on observed storage and TB facility stocks, as well as the treated number of patients) that the drugs have been used for other non-TB patients. Finally, it is well-known in the country that these drugs are for TB patients via the media and this could also be a deterrent for such illegal activities with humanitarian drugs.

- 8. What evidence is there that TB drugs are provided free to TB patients?**

Ten patients from multiple sites visited were interviewed and maintained that their drugs were free-of-charge. One patient, a young student, indicated that she paid 650 Moldovan lei (approximately 50USD) for a 1-year health insurance policy to cover her in-patient treatment in her local area (rather than receiving free treatment further away which did not require such insurance). Further, there were mass media reports of the free drugs; so, the population at large should be fairly aware that they are entitled to free treatment.

- 9. What evidence is there that GDF drugs were only used in DOTS programmes in areas indicated in the application submitted to and approved by the GDF?**

The DOTS programme now covers the whole of the country including Transdeistr, which matches the areas indicated in the application. A distribution plan is prepared by the NTP quarterly, authorised by the First Vice Minister of Health, and sent to SanFarmPrim, the MOH's distributor, as instructions for the allocation and issues of GDF anti-TB medicines to raion health facilities/authorities.

- 10. Does the NTP follow WHO recommended treatment regimens including drug dosage (i.e. no. of tables for different weight bands as per WHO recommendations) in areas where GDF drugs are being used.**

YES X

**If no, please explain how the regimens and/or dosage are different:**

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For PZA, weight is factored into the regimens and individualized drug regimens (for the treatment of MDRTB) were used for a limited number of patients.

**Financial management**

**11. Is there any evidence that GDF grant has displaced resources that would otherwise have been available from the government or other donors?**

**NO**

**Provide the following indicators:**

- **Proportion of total financial requirements for DOTS implementation/expansion available:**  
 \_\_\_\_\_ Combined sources: 100% \_\_\_\_\_
  
- **Indicate the proportion of TB funding from government vs. other sources using the table below:**

**Table 3: Proportion of TB funding from government vs. other sources**

Budget/Expenditure <i>(Expenditure for last year, budget for current and next year)</i>			Last year: Year 2004 _____		Current year: Year 2005 _____		Next year: Year 2006 _____	
			Amount In US \$	% (of total)	Amount In US \$	% (of total)	Amount In US \$	% (of total)
A. Total TB budget from national government <i>(non-donor funds &amp; interest-bearing loans)</i>	Drugs		264,000	5.3	208,000	3.2	~208,000	5.2
	Other		2,431,656	48.7	2,400,000	37.4	~2,400,000	60.5
B. Total TB budget from donors <i>(Specify name of donor(s) beside amount)</i>	Loans <i>(non-interest bearing)</i>	Drugs	0		0		0	
		Other	0		0		0	
	Grants <i>(in-kind)</i>	Drugs: GFATM	0		350,000 <sup>A</sup>	5.4	380,000 <sup>B</sup>	9.6
		GFATM	980,524	19.7	550,000	8.7	450,000	11.3
	AIHA/USAID	700,000	14.0	2,300,000	35.9	500,000	12.6	
C. GDF grant (equivalent \$)			83,000	1.7	62,250	1.0	0	
D. Total TB budget from other sources <i>(specify)</i>	<b>Drugs:</b> Caritas		~17,250*	0.3	~5,200*	0.1	Not available	

	<b>Other:</b>						
	WHO	150,000	3.0	180,000	2.8	~30,000	0.8
	Caritas	~212,750*	4.3	~196,300*	3.0	Not available	
	KNCV	~149,500*	3.0	~161,200*	2.5	Not available	
E. Total TB budget (A + B+C + D)	Drugs	364,250	7.3	625,450	9.8	588,000	14.8
	Other	4,624,430	92.7	5,787,500	90.2	3,380,000	85.2

<sup>A</sup> \$200,000 1<sup>st</sup> line drugs to purchase from GDF in 2005 and an equal amount budgeted to purchase from GDF in 2006.

<sup>B</sup> \$150,000 for 2<sup>nd</sup> line drugs via GLC in 2005 and \$ 180,000 for 2<sup>nd</sup> line drugs in 2006.

\* Re-calculated from EUROS: assumption 2004 1.15\$=1EURO; 2005 1.30\$=1EURO

## Partners/Donors

### 12. Please list the NGO/Partners/Donors involved in TB control activities in the country.

#### NGO/Partners/Donors

#### Main area(s) of Collaboration with NTP

\_WHO\_\_\_\_\_
   
 \_MSH/USAID\_\_\_\_\_
   
 \_GFATM\_\_\_\_\_
   
 \_AIHA/USAID\_\_\_\_\_
   
 \_GDF/Stop TB Partnership\_\_\_\_\_
   
 \_KNCV\_\_\_\_\_
   
 \_Caritas Luxembourg\_\_\_\_\_

\_Technical and financial support\_\_\_\_\_
   
 \_Technical support\_\_\_\_\_
   
 \_Financial\_\_\_\_\_
   
 \_Technical and financial\_\_\_\_\_
   
 \_Financial\_\_\_\_\_
   
 \_Technical\_\_\_\_\_
   
 \_Technical & financial\_\_\_\_\_

## Port clearance

### 13. Report the port clearance time for the last GDF drug shipment:

Date GDF shipment arrived in port, 22 Sept 2004

(-) Date drugs moved to warehouse, ready for distribution in-country, 7 Oct 2004

(=) Number of days to clear port. 15 days

NB: There was a delay while the distributor/clearing agents (San Farm Prim) provided documentary evidence that they were the same company as named as the consignee in the shipping documents (Basa Farm). The company had changed its name early in 2004.

### 14. Is there evidence that the government took full responsibility for any import duties and taxes levied on drugs supplied by the GDF?

YES  NO  Please explain your answer:

As for all consignments of "humanitarian aid" the import duties and taxes are waived.

## Drug registration and quality

15. Did all the drugs provided by the GDF meet all national drug registration requirements? Yes\* x

*The answer is neither "yes" nor "no".*

**If no, please explain.**

\*It is not completely known if the drugs provided by the GDF would meet all national registration requirements because as humanitarian aid the drugs were granted a special exemption from usual registration requirements; however, they passed the quality control tests and were actively distributed throughout the country.

16. Does the government carry out quality control of drugs used in the NTP?  
 YES  NO

**If YES, please indicate the number of drugs that failed quality control testing out of the total number of drugs tested (and the manufacturers) that failed quality control testing out of the total number of drugs tested:**

The Director of the National Institute of Pharmacy (where lies the responsibility for quality control) informed the monitoring team that none of the GDF drugs had failed the tests (all products were tested).

**In - country TB drug manufacturing**

17. Are any anti TB drugs being manufactured in the country  
 YES  NO

**If yes, please fill in the following table**

**Table 4: In - country TB drug manufacturing**

TB Drug	Strength (mg)	Single/FDC	Loose/Blister	Cost per unit <sup>5</sup> US\$	Name of the Manufacturer
Rifampicin	300 mg	Single	blister	\$0.06	ICS Eurofarmaco SA

18. Has the monitoring mission team briefed the following on the pre-qualification process or inclusion in the GDF white list of manufacturers?

<sup>5</sup> Cost of TB drugs per unit (e.g. 100 tablets) in US \$

MoH  NTP  TB drug Manufacturers

None of the above were briefed.

**Please detail any follow up steps and/or provide additional comments:**

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### Stock Management

19. Were any TB drugs out of stock<sup>6</sup> in MOH national stores during the last 12 months? YES  NO

**If YES, indicate the average percentage of time they were out of stock.**

Pyrazinamide was out of stock at the contracted distributor's warehouse in Chisinau for approximately 3 months (June, July and August) or 25% of the year.

**Please provide additional details:**

The stock shortages, reportedly, did not interrupt individual patients' treatment because the drugs were locally procured to prevent treatment interruptions.

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20. Did you find any expired TB drugs in the MOH national stores at the time of your visit?

YES  NO

21. Indicate the value and quantity of any pending TB drug deliveries from all sources, by source (donor, government procurement e.t.c) expected to be received in-country over the next 6 months.

**Table 5: Value and quantity of any pending TB drug deliveries from all sources**

Drug	Source	Quantity	Value	Expected delivery date
RH 150/75	GDF direct procurement	3,384,000	\$39,457	
Z400	GDF direct procurement	3,384,000	\$42,774	

<sup>6</sup> Time out of stock, or stock-out time, is defined as the number of days that a product was not present in a warehouse or health facility over a recent 12-month period (usually the 12 months preceding the one during which the monitoring takes place). To be considered a stock-out, there must have been none of an unexpired drug in stock. If even small quantities of an unexpired drug were present, the drug should be counted as in stock. Percentage of time out of stock is defined as the percentage of days during a 12-month period that a drug has been out of stock (based on inventory records).

<b>E400</b>	<b>GDF direct procurement</b>	<b>2,610,000</b>	<b>\$28,501</b>	
<b>RH 150/150</b>	<b>GDF direct procurement</b>	<b>2,932,200</b>	<b>\$35,018</b>	
<b>S 1g</b>	<b>GDF direct procurement</b>	<b>252,000</b>	<b>\$5,040</b>	
<b>H300</b>	<b>GDF direct procurement</b>	<b>540,000</b>	<b>\$1,971</b>	

**Technical review committee (TRC) recommendations**

22. Did TRC make recommendations during 2<sup>nd</sup> year of GDF grant for 3<sup>rd</sup> year support?

YES  NO

23. If YES, write below the recommendations made by the TRC during 2<sup>nd</sup> year of GDF grant for 3<sup>rd</sup> year support and provide details on progress made by the NTP/government for fulfilling them. If no progress has been made on a specific recommendation, indicate what the NTP/government plans are to fulfil that obligation.

**Table 6: TRC recommendations during 2nd year GDF grant for 3rd year support and action taken**

<b>Recommendation</b>	<b>Action Taken &amp; Results</b>
The procurement and distribution systems ought to be unified.	Except to respond to shortages, all first line anti-TB medicines have been supplied by the GDF. Medicines bought centrally by the NTP/MOH have been distributed through the same mechanism as the GDF supply.
Drugs should be distributed quarterly rather than annually. Also, their estimates should be driven by prior stocks/consumption reports and requirements.	The GDF medicines have been distributed quarterly on the basis of distribution plans prepared by the NTP using quarterly reports from the raions. These quarterly reports provide data on the opening balance, receipts, issues (or consumption) and closing balance for each product. Staff at the M&E Department at the TB Institute review the report, including the available stocks, and the estimate of cases in the next quarter to determine the amount to be distributed.
It is necessary to specify the drugs that will be procured by the government.	See above description of order for GDF.
Procurement of 2nd line TB drugs should be postponed. First, the guidelines of the GLC should be followed.	The Ministry of Health postponed the tender for 2 <sup>nd</sup> line medicines in 2004 (month?). Moldova has successfully applied to the Green Light Committee

	and will be procuring 2 <sup>nd</sup> line medicines for 70 patients in the 2 <sup>nd</sup> quarter of 2005.
It is necessary to study the factors leading to the current poor treatment results, in terms of high failure and default rates.	High failure rates may be largely due to MDR-TB which is estimated to be high in Moldova but a nationally representative DRS survey is underway; default can be greatly attributed to the migration of many people but improvements are being sought.
Direct procurement for the GDF first line drugs with government funds or GFATM support is encouraged.	The NTP and MOH are actively considering and preparing for the procurement of 1 <sup>st</sup> line medicines through the GDF, using GFATM Project funding for 2005.

**Recommendations from the 2<sup>nd</sup> year country monitoring mission**

- 24. Please review the recommendations made during the 2<sup>nd</sup> year GDF monitoring mission. Using the 2<sup>nd</sup> year monitoring mission report, write below the recommendations and the progress made by the NTP/government for fulfilling them. If no progress has been made on a specific recommendation, indicate what the NTP/government plans are to fulfil that obligation.**

**Table 7: 2nd year monitoring mission recommendations and action taken**

<i>Recommendation</i>	<i>Action Taken &amp; Results</i>

**25. GDF Grant Phase Out**

25.1 Would the country need financial assistance for procurement of anti TB drugs after three years of GDF grant?

NOX

25.2 If yes, have any other donor funds been secured for anti TB drug procurement?

YES  NO

25.3 If no, is the country considering applying for 2<sup>nd</sup> term GDF grant (i.e. after initial 3 years of GDF grant)?

NO x

If the country is considering applying for 2<sup>nd</sup> term GDF grant:

25.4 Has the country prepared the application for submission to the GDF secretariat?

YES  NO

25.5 Was MoH briefed on application process, terms and conditions for 2nd term GDF grant (i.e. after three years of grant)?

YES  NO

25.6 Was NTP briefed on application process, terms and conditions for 2nd term GDF grant (i.e. after three years of grant)?

YES  NO

GDF request for 2<sup>nd</sup> term (1<sup>st</sup> year) grant (if applicable)

26. Estimates of patients to be treated with GDF drugs

Year: \_\_\_\_\_

**Table 8. Date drugs required (without using buffer stocks):** \_\_\_\_\_

		<b>A</b>	<b>B</b>
Treatment Category	Regimen	Total number of cases NTP expects to treat under DOTS using drugs from ALL SOURCES	Total number of cases NTP expects to treat under DOTS using drugs SUPPLIED BY GDF
1			
2			
3			
<b>Buffer Stock</b> required for cases under column B: YES <input type="checkbox"/> NO <input type="checkbox"/>		If <b>YES</b> indicate percentage here: %**	

\*\* Kindly provide % of buffer stock in the space provided only, do not include buffer stock calculation for any treatment category under column B. The GDF secretariat will calculate the amount of buffer for each treatment category according to the % figure provided in the above table.

**Table 8: Drug requirement and stock level**

**Table 9: Drug needs (formulation and strength), type of packaging and cost**

Drug	Requirement	Type of Packaging	No of units	Cost
<b>Kits Cat. 1&amp;3</b>				
<b>Kits Cat. 2</b>				
RHZE 150/75/400/275				
RHE150/75/275				
RH150/75				
RH150/150				
EH400/150				
Z400				
E400				
H300				
S 1 g				
Water for injection				

## 27. Monitoring mission main recommendations

Please list below the main recommendations from this monitoring mission to:

Drug	(A) Drug needs for 1 year	(B) Buffer Stock needed %	(C) Drug needs until next delivery	(D) Current stock (at the time of the GDF visit)	(E) Pending <sup>7</sup> deliveries (GDF + non GDF)	(A+B+C-D-E) Total GDF drug order
RHZE 150/75/400/275						
RHE 150/75/275						
RH 150/75						
RH 150/150						
EH 400/150						
Z400						
E400						
H300						
S 1 g						
Water for injection						

<sup>7</sup> If the supply of drugs from any source is assured with absolute certainty within the next 2 months, the quantity of this supply should be added to the current stocks column D.

NTP/MoH

The Ministry of Health is recommended to finalise its decision to procure first line anti-TB medicines through the Direct Purchase mechanism, using funding earmarked in the Global Fund Project. The Technical Agreement with the GDF should be established soonest and the financial arrangements initiated, so that the order once placed can be met without delay. There is some urgency in implementing this activity given the current level of stocks.

The NTP is recommended to purchase fixed dose combination products in blister packs to better safeguard the condition and efficacy of the pharmaceutical constituents of the tablets during distribution and dispensing to patients.

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Donors

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GDF

As noted earlier in this report the GDF products are not registered in Moldova, which is the usual requirement for pharmaceutical products to enter the Moldovan market. Previously GDF medicines have been granted a special waiver from this requirement, being classified as humanitarian aid. It is not clear if this is an option for the directly procured items. Under circumstances where a manufacturer would not normally have an interest in applying for its products to be registered (for example; too small a market, costs of registration), but where it would be beneficial from a continuity point of view to maintain supply of the same known-quality products, it might be appropriate for the GDF to encourage and support its suppliers in pursuing the registration of their products in Moldova.

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Others

Feedback

The independent consultant collecting these data will provide the following information as feedback to the GDF. The GDF will use the information to modify the data collection tool for future monitoring.

If you had difficulty collecting data for a particular item above, indicate the item below and the reason. From the possible *reasons* given below, choose the one most appropriate or indicate a different one in the space provided

Problem: \_\_\_\_\_ Reason: \_\_\_\_\_

Problem: \_\_\_\_\_ Reason: \_\_\_\_\_

Problem: \_\_\_\_\_ Reason: \_\_\_\_\_

Reasons:

- A. Data not made available to you
- B. Data not easily retrievable
- C. Question not clear
- D. Other, indicate: \_\_\_\_\_
- E. Other, indicate: \_\_\_\_\_

Report distribution list:

1. Director TBP
2. Director STB (high burden countries only)
3. Operations Manager, GDF
4. Co-ordinator TBS (high burden countries only)
5. Regional Focal Point STB
6. Regional Director/Regional Advisor
7. **WR: There is no WHO special representative in Moldova; however, the liaison officer, Dr. Pavel Ursu should be cc:d (WHO Liaison Office in the Republic of Moldova, 17 Sfatul Tarii Str., Office 37038, Chisinau 2012, Republic of Moldova). Email: pursu.who@un.md**
8. **NTP Manager: Prof. Dumitru Sain, National TB Manager, Institute of Phthysiopneumology, 13, Constantin Virnav str, Chisinau, MD 2025, Republic of Moldova. Email: ntpmd@mcc.md**
9. In - country partners (NGO/Donors):
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10. GFATM Portfolio Manager

11. Registry

12. DAP Co-ordinator, EDM

13. PAR Co-ordinator, EDM

14. Co-travellers

(Distribution of the report is responsibility of GDF secretariat however mission members have to specify the names and titles for country level officials i.e. from 7 to 9)



## BIBLIOGRAPHY

Burn, Robert 2005 *Trip Report: Technical Assistance to the DOTS Plus Program-Moldova* Submitted to the U.S. Agency for International Development by the Rational Pharmaceutical Management Plus Program. Arlington, VA: Management Sciences for Health

Burn, Robert. 2004 *Drug Management Indicators for the National Tuberculosis Control Program, Moldova* Submitted to the U.S. Agency for International Development by the Rational Pharmaceutical Management Plus Program. Arlington, VA: Management Sciences for Health.

Burn, Robert. 2004. “*RPM Plus Moldova Activities Coordination, June 5-11, 2004*”. Submitted to the U.S. Agency for International Development by the Rational Pharmaceutical Management Plus Program. Arlington, VA: Management Sciences for Health.

Burn, Robert. 2004. *Trip Report: “RPM Plus Moldova Activities Coordination and Global Drug Facility Monitoring Mission, January 26–February 4, 2004”*. Submitted to the U.S. Agency for International Development by the Rational Pharmaceutical Management Plus Program. Arlington, VA: Management Sciences for Health.

Burn, Robert. 2003. *Trip Report: “RPM Plus Activities, Moldova, June 29-July 3, 2003”*. Submitted to the U.S. Agency for International Development by the Rational Pharmaceutical Management Plus Program. Arlington, VA: Management Sciences for Health.

Burn, Robert. 2003. *Trip Report: “Informed Decision-Making for Drug and Supply Management within the National Tuberculosis Program: Current Status and Options for Strengthening” Workshop, Chisinau, Moldova, April 23–24, 2003*. Submitted to the U.S. Agency for International Development by the Rational Pharmaceutical Management Plus Program. Arlington, VA: Management Sciences for Health.

Burn, Robert, 2003. *Workshop Proceedings Report: “Informed Decision-Making for Drug and Supply Management within the National Tuberculosis Program: Current Status and Options for Strengthening” Workshop, Chisinau, Moldova, April 23–24, 2003*. Submitted to the U.S. Agency for International Development by the Rational Pharmaceutical Management Plus Program. Arlington, VA: Management Sciences for Health

Makarova, Tatyana. 2003. *Trip Report: Drug Management Information System for the National Tuberculosis Control Program in Moldova: Post-Assessment Mission*. Submitted to the U.S. Agency for International Development by the

Rational Pharmaceutical Management Plus Program. Arlington, VA: Management Sciences for Health.

Makarova, Tatyana; Burn, Robert and Sandhya Rao. 2002. *RPM Plus Moldova Trip Report: Assessment of the Drug Management Information System for the National Tuberculosis Control Program in Moldova*. Submitted to the U.S. Agency for International Development by the Rational Pharmaceutical Management Plus Program. Arlington, VA: Management Sciences for Health.

Management Sciences for Health and the World Health Organization. *Managing Drug Supply: The Selection, Procurement, Distribution, and Use of Pharmaceuticals*. Second edition, revised and expanded. W.Hartford, CT: Kumarian Press, 1997

Zagorskiy, Andrey and Alix Beith. 2002 *RPM Plus Moldova Trip Report: Brief Assessment of Tuberculosis Drug Procurement in Moldova*. Submitted to the U.S. Agency for International Development by the Rational Pharmaceutical Management Plus Program. Arlington, VA: Management Sciences for Health.