RPM PERU FINAL REPORT

Dr. Manuel Vargas
Dr. David Nelson
Inga Adams

April 2000

Rational Pharmaceutical Management Project
C.A. No. HRN-A-00-92-0059-13

Management Sciences for Health
1515 Wilson Boulevard, Suite 710
Arlington, VA 22209 USA
Phone: 703-524-6575
Fax: 703-524-7898
E-mail: rpm@msh.org

Contents

Executive Summary

From 1996 to 1999, the Rational Pharmaceutical Management (RPM) project assisted the Ministry of Health (MOH) of Peru and projects supported by the U.S. Agency for International Development (USAID) to manage and use drugs rationally. The RPM strategy focused on building decentralized drug management programs using the Monitoring-Training-Planning (MTP) methodology, a stepwise tool for participatory training and program implementation. RPM activities in Peru were managed primarily through short-term technical assistance (TA) visits and collaboration with in-country consultants.

RPM's targeted interventions, activities, and technical assistance resulted in several major improvements in drug management. RPM collaborated primarily with three projects and one municipality to improve drug management techniques at the national, regional and local levels:

- DIGEMID, the MOH's Directorate of Drugs and Medical Supplies
  - Bring together technical experts and provide reference information to support DIGEMID in the design and production of the National Drug Formulary (NDF). The NDF was approved and published in October 1997.
  - Provide technical assistance, informational materials, and supplies to DIGEMID to develop the National Standard Treatment Guidelines (STG)

- Project 2000, to improve pharmaceutical management and rational drug use in MOH hospitals supported by the USAID Mission
  - Assist Project 2000 to implement the NDF in 21 participating Project 2000 hospitals, working primarily with regional hospital–level pharmacology and therapeutics (P&T) committees
  - Collaborate with Project 2000 to improve hospital drug management, including use of an indicator-based evaluation, in 21 hospitals
  - Sponsor a drug information needs assessment and the design of an electronic drug information system
  - Launch of a Peruvian rational drug use Web page in September 1999

- ReproSalud, USAID/Peru's reproductive health project
  - Guide ReproSalud on drug importation issues, including importation mechanisms, customs clearance, and techniques for supplying and distributing reproductive health drugs

- Municipality of Magdalena del Mar, to implement a pilot health education program at the primary school level
  - Provide materials and a framework for the pilot implementation of the Rational Drug Use in Schools education program, URMES, in eight public schools in the municipality of Magdalena del Mar

Acknowledgments

Econ. Maria Angelica Borneck, USAID
Dr. Bruno Benavides, Project 2000
Dr. Manuel Izaguirre, DIGEMID
Dr. Hugo Oblitas, PROJECT 2000

Directors of Hospitals and Members of Hospital Pharmacology Committees
Members of Regional Pharmacology Committees, especially
Lourdes Armas, Trujillo
Petronila Castro, Ica
Rejis García, Hipólito Unanue Hospital
José Alvites, Director, Hipólito Unanue Hospital
Rubén Orcada, Chosica Hospital
Alberto Reátegui, DIGEMID
Frank Lazarte
Josefa López, Director of ProVida

Senior Technical Assistants of RPM
Inga Adams
Mehreen Butt

Acronyms

CARE	Cooperative for Assistance and Releif Everywhere, Inc.
CBO	community-based organization
DIGEMID	Dirección General de Medicamentos, Insumos y Drogas (General Directorate of Drugs and Medical Supplies)
DIREMID	Dirección Regional de Medicamentos, Insumos y Drogas (Regional Directorate of Drugs and Medical Supplies)
DISA	Dirección de Salud (Regional Health Directorate)
HF	hospital formulary
HPC	Hospital Pharmacology Committee (also P&T committee)
INVEC-2	Inventory Control and Management Software, second edition
MMR	Movimiento Manuela Ramos (NGO project holder for ReproSalud)
MOH	Ministry of Health
MTP	Monitoring-Training-Planning
NDF	National Drug Formulary
NGO	non-governmental organization
P&T	pharmacology & therapeutics (committee)
PACFARM	Programa de Administración Compartida de Fármacos (Program for Shared Administration of Pharmaceuticals)
PAR	Programa de Apoyo a la Reforma del Sector Salud (World Bank)
PSNB	Proyecto de Salud y Nutrición Básica (Basic Health and Nutrition Project)
RDF	revolving drug fund
RDU	rational drug use
RH	reproductive health
RPM	Rational Pharmaceutical Management
STG	standard treatment guideline
URMES	Uso Racional de Medicamentos en Escuelas Secundarias (Rational Drug Use in Schools)
URMH	uso racional de medicamentos (rational drug use)
UNICEF	United Nations Children's Fund
USAID	U.S. Agency for International Development

Program Overview

From 1996 to 1997, USAID/Peru allocated a total of $499,000 in field support funds to RPM. RPM assistance in Peru began in mid-1996 with an assessment and planning visit by the RPM Assistant Director. The Peru country work plan was developed as result, which identified eight areas of involvement with three principal counterparts. RPM programming was launched in the second half of 1997. USAID's priority for RPM work in Peru was to provide assistance to—

- **DIGEMID,** the MOH's Directorate of Drugs and Medical Supplies
- **Project 2000,** to improve pharmaceutical management and rational drug use in MOH hospitals supported by the USAID mission
- **ReproSalud,** USAID/Peru's reproductive health project
- **Magdalena del Mar,** to apply RPM's Rational Drug Use in Schools program

Primary Collaborators

In the early nineties, **DIGEMID** established a decentralized drug supply system, PACFARM, with regional purchasing and supply centers to sell drugs to MOH ambulatory units. These units, in turn, apply a modest markup, sell the drugs to patients, and repurchase drugs from PACFARM. In 1996, RPM was asked to assist the design of a national directive to formalize the PACFARM revolving drug funds. Then, in 1997, DIGEMID requested specific RPM assistance in the development and implementation of regional and national drug formularies and the national standard treatment guidelines.

Project 2000 is a major USAID/Peru initiative to strengthen the Ministry of Health's maternal-child health services. Project 2000 has focused on improving the quality of obstetric and perinatal service in 18 regional and national hospitals. These "centers of excellence" then train service providers from secondary hospitals and primary care facilities. In 1998, when Project 2000 learned of the NDF that was developed with DIGEMID, Project 2000 requested that RPM support the development and implementation of hospital formularies to improve drug management and use in the project's 18 hospitals. This number grew to include 21 hospitals. Once the rational drug-use activities were completed in the initial hospitals in 1999, they were to be expanded to more than 100 other facilities.

ReproSalud is operated by a local nongovernmental organization (NGO), *Movimiento Manuela Ramos* (MMR), which supports community-based organizations (CBOs) in promoting reproductive health (RH) in remote, rural areas. RPM assisted MMR to design a medical service and drug delivery system based on local service providers and on imported RH drugs. Over-the-counter drugs were to be supplied from local service provider units to CBOs with revolving drug funds (RDFs) to maintain drug supplies and sell drugs to members, using profits to defray drug costs for indigents.

In the latter half of 1999, in response to an initiative by the municipality of **Magdalena del Mar** in metropolitan Lima and with support from Health Action International, RPM assisted with the pilot implementation of the Rational Drug Use in Schools (URMES) program in eight public schools. URMES is a modular health education program that teachers and community volunteers can implement in primary schools. RPM designed and applied URMES in Ecuador. Each URMES module covers four aspects of a health condition: cause, symptoms, prevention, and treatment. In 1999 RPM worked with eight pilot schools in Magdalena del Mar to apply three of the eight URMES modules.

Objectives

Since 1996, RPM's general objectives in Peru have been to—

1. Support development and implementation of national, regional, and hospital-level drug formularies and standard treatment guidelines
2. Improve drug management in MOH hospitals and health centers
3. Assist ReproSalud to develop systems to import and distribute RH drugs and to formalize and structure revolving drug funds
4. Assist ReproSalud to build rational drug use into CBO responses to priority RH problems.
5. Apply a pilot URMES program in Magdalena del Mar

Implementation Strategy

The RPM strategy in Peru was to help counterparts to implement their programs using RPM's Monitoring-Training-Planning (MTP) methodology. This tool for program implementation and training has been useful to ministries of health, NGOs, and health-service providers in many countries. The approach was well suited to the decentralized drug management structure of the MOH, Project 2000, and ReproSalud. The principles of the MTP tool, summarized at right, were easily applied to the Peruvian health system.

Principles of the MTP methodology

- Stepwise implementation, usually through monthly meetings
- Detailed planning so expectations and materials are clear
- Specific products or goals for each meeting
- Recognize efforts of participants
- Participatory
- Group supervision
- Short meetings

The principles that underlie the MTP tool informed much of RPM's work in Peru. The first principle is that the program is continuous, stepwise, and implemented in a structured fashion. Second, every step to implement the program is planned out in advance and detailed in the instructions - no guesswork, no improvisation. Third, the programs lead to concrete products that are shared and exhibited among peers. Fourth, since most MTP participants are volunteers who often don't have much time to dedicate, the institution should recognize their efforts and thank them. Fifth, work is spread among the team of participants so that everyone takes part and no one person is left with all of the responsibilities. Sixth, supervision by all participants of each other's responsibilities and tasks increases accountability and improves problem-solving skills. Seventh,

MTP sessions must be consistently short and punctual. Therefore volunteers are asked to devote only a couple of half days or evenings per month for short, prompt meetings. Finally, the materials and approach allow for adaptation to the particular needs of each locale.
In addition to designing and applying the MTP tool, RPM provided direct technical assistance and informational materials on drug management to collaborators and interested parties.

Major Activities

In carrying out the implementation strategy, RPM conducted the following major activities:

- Provided technical assistance and material resources to DIGEMID to design and produce the National Drug Formulary (NDF)
- Organized systematic implementation of the NDF through Regional Drug Directorates as well as regional and hospital-level pharmacology and therapeutics (P&T) committees using the MTP methodology
- Supported DIGEMID with technical assistance, equipment, and supplies to develop the National Standard Treatment Guidelines
- Designed and implemented a self-sustaining system for Project 2000 and the MOH to improve hospital drug management, including indicator-based evaluation, using MTP
- Guided ReproSalud on importation (including registration and customs clearance) and distribution of RH drugs
- Worked with ReproSalud and CBOs on the incorporation of drug management activities into the RH efforts using MTP

Chronological Activity Highlights

RPM assistance in Peru began in mid-1996 with an assessment and planning visit by the RPM Assistant Director. The first Peru country work plan that was developed identified eight areas of involvement with RPM's four principal counterparts, DIGEMID, Project 2000, ReproSalud, and the SHIP project. The activities were adapted over time to the actual needs of the organizations, NGO's, MOH, and the USAID/Peru Mission.

The SHIP activities planned for at the start of RPM programming in Peru were never funded and did not take place. The SHIP-North and South projects were USAID-funded contracts with University Research Corporation and CARE, which included systems for the distribution and rational use of pharmaceuticals in health centers in Chiclayo and Puno health regions. RPM was asked to assist with training in drug selection, rational prescribing and cost-efficient therapies as well as install the RPM inventory control software, INVEC-2. A further activity was discussed, specifically to develop a manual for revolving drug funds.

Activity highlights for each of the three main RPM collaborators can be found on the following pages.

DIGEMID: Activity Highlights

As work with DIGEMID evolved and the NDF was officially completed in mid-1998, RPM proposed an implementation strategy to achieve adoption and application of the NDF in hospitals supported by Project 2000. The MTP methodology was adapted to the Peruvian hospital context and was applied by hospital directors and P&T committees in 12 health regions.

Date	Activity
June and July 1996	Preliminary visit to define technical assistance needs and prepare RPM work plan.
June 1997	Assistance to DIGEMID on a directive for administration of revolving drug funds.
August 1997	Assistance to DIGEMID to implement and supervise the drug revolving funds. Prepare scope of work to support ReproSalud drug importation, distribution, and resupply. Initial discussions with Project 2000 to improve hospital drug management.
April 1998	Technical assistance and material resources to plan and execute a workshop with members of regional pharmacology (P&T) committees from 34 health regions to design and produce the National Drug Formulary.
May 1998	Technical assistance in planning and execution of a workshop to introduce the MTP methodology to hospital directors and members of 20 hospital P&T committees. Technical assistance to Chosica Hospital to develop tutorial for MTP module on P&T for hospital directors and members of 21 hospital P&T committees.
July 1998	Technical assistance to Chosica Hospital to plan and execute a workshop to apply the Drug Selection MTP module for hospital directors and members of 21 hospital P&T committees.
Nov 1998	Technical assistance and material resources to plan and execute a workshop for members of 34 regional P&T committees to introduce and adopt the NDF.
Dec 1998	Technical assistance to develop guidelines for elaboration of drug formularies for health centers.
Jan – Dec 1999	Continuing technical assistance, equipment, and supplies to develop the national Standard Treatment Guidelines.

Project 2000: Activity Highlights

Date	Activity
May 1998	Technical assistance to plan and execute a workshop to introduce the MTP methodology to hospital directors and members of P&T committees of Project 2000 hospitals. Technical assistance to Chosica Hospital to develop tutorial for first MTP module for hospital directors and members of P&T committees.
July 1998	Technical assistance to Chosica Hospital to plan and execute a workshop to develop MTP tutorial for Drugs Selection Module for hospital directors and members of 21 hospital P&T committees.
Sept 1998	Technical assistance to Belen Hospital of Trujillo to plan and execute the MTP session on Prescribing Practices for hospital directors, members of 21 hospital P&T committees, and members of 12 regional P&T committees.
Nov 1998	Technical assistance to Hipolito Unanue Hospital of Lima to plan and execute a workshop to apply MTP module on Hospital Pharmacy for hospital directors, members of 21 P&T committees, pharmacy chiefs, and members of 12 regional P&T committees.
Dec 1998	Technical assistance to plan and execute a workshop to address the resistance by doctors and prescribers to the use of STGs and other rational drug use methods in hospitals. A workshop was conducted for hospital directors, members of 21 hospital P&T committees, and members of 12 regional P&T committees. Initiation of MTP module on Evaluation of Drug Management by Indicators for hospital directors, members of 21 hospital P&T committees and members of 12 regional P&T committees.
April 1999	Technical assistance to hospital directors and members of 21 hospital P&T committees to plan and execute a workshop to show results of indicator-based evaluation to MOH authorities.
May 1999	Technical assistance to plan and execute a workshop to show changes achieved in hospital pharmacies. Initiate MTP modules on P&T Committee Management and Patient Education for hospital directors, members of 21 hospital P&T committees, and members of 12 regional P&T committees.
June 1999	Technical assistance for monitoring RPM implementation and 2^{nd} - 3^{rd} self-evaluation using indicators in 21 hospitals.
May – June 1999	Technical assistance to regional P&T committee for rational drug use in hospitals (URMH) program implementation in all Ica Health Centers.
Jan – July 1999	Technical assistance to regional P&T committee for URMH implementation in all Ucayali Health Centers.
Dec 1998 – August 1999	Technical assistance to regional P&T committee for URMH implementation in all San Martin Health Centers.

ReproSalud Project: Activity Highlights

An RH drug purchase for ReproSalud had been negotiated in 1995–96 by USAID/Peru before RPM was called on to advise on the importation, distribution, and cost recovery of the drugs. A number of discussions were held with USAID and MMR to develop a plan to deal with the RH drugs through Peruvian institutions such as PRISMA (to clear customs and manage paperwork for the donation to the MOH), DIGEMID-PACFARM (to absorb the donated drugs into the national distribution system and recover costs through the existing revolving drug funds), and regional health directorates (to ensure that RH services were provided in response to CBO needs). The following time line shows the sequence of activities initiated in 1997, which were finally halted in December 1998 because MMR had decided to eliminate drug provision from an already ambitious project agenda.

Date	Activity
Aug 1997	Prepare scope of work and budget to support ReproSalud drug importation, distribution, and resupply.
April 1998	Assist MMR to complete importation of RH drugs and plan to use PACFARM infrastructure to achieve distribution and cost recovery in MOH health centers and posts in project sites. Meeting to involve local NGO PRISMA for customs clearances.
May 1998	Design MTP modules to organize drug use by CBOs with assistance from MOH units in the area.
July 1998	Technical assistance to design and test MTP module in Puno with regional MMR office and CBO.
Nov 1998	Draft clauses for agreements between regional MMR and MOH offices to include provision and use of RH drugs in MOH service facilities. Plan closeout of support to ReproSalud.
Dec 1998	Technical assistance to prepare checklist for drug management considerations to be incorporated into agreements between MMR and regional MOH offices to ensure availability and appropriate use of reproductive health drugs (incomplete).

Challenges Facing RPM Peru Program Implementation

At the time that RPM began to discuss potential activities in Peru, DIGEMID and Project 2000 each conducted an assessment of the national drug management situation. DIGEMID conducted an assessment using RPM's pharmaceutical sector assessment tool. Project 2000 contracted a local NGO, ProVida, to conduct an assessment of Project 2000 hospitals. ProVida did not use the RPM assessment methodology.

It was clear from the two independent assessments that there were several pharmaceutical sector issues that RPM programming could address, including the following:

- Hospital P&T committees did not exist or were inactive in the hospitals surveyed.
- Hospital formularies, where they existed, were limited to informal lists of most frequently procured drugs.
- There were serious drug stocking and dispensing problems.
- There were no formal STGs in the hospitals, and only some Project 2000 hospitals with maternal-child health services had limited STGs for specific primary child care conditions.

Furthermore, the MMR, which operated USAID's ReproSalud project, had a profound distrust of MOH services. MOH services, specifically hospital and primary care facilities, were seen by ReproSalud as nonresponsive to the RH needs of CBO members. MMR identified obstacles such as culturally inappropriate attention, lack of medicines, absence of service providers, and the like. Thus, MOH facilities were not seen as acceptable service providers or suppliers of RH drugs to CBO members.

In addition to these challenges, the MTP methodology was unknown in Peru. RPM's collaborators, many accustomed to lengthy one-time workshops, were hesitant to commit to a long-term training and implementation program. The basic RPM strategy needed to be explained to stakeholders and counterparts and tested by them in order to demonstrate its effectiveness.

Program Accomplishments

This section on program accomplishments begins with a summary of results and achievements from RPM's collaboration with DIGEMID, Project 2000, and ReproSalud. That portion is followed by a general discussion of overall improvements and trends in drug management in Peru.

RPM Collaboration with DIGEMID

Created a National Drug Formulary

RPM assisted DIGEMID in the production and publication of the National Drug Formulary (NDF) by convening 21 Peruvian experts to participate and provide clinical input during the NDF Workshop in April 1998. In addition to technical support, RPM provided financial assistance to hold the workshop. Because of the need to process drug monographs and the text of the NDF, RPM provided a computer to DIGEMID. The NDF was officially published in October 1998 and rules for regional and local implementation of the NDF were issued by DIGEMID in November of that year.

Developed Standard Treatment Guidelines

RPM assisted DIGEMID to develop and draft standard treatment guidelines, *Guía Farmacoterapéutico,* which will be published in early 2000. RPM provided an expert consultant to assist in the STG editorial process and contributed a photocopying machine, paper, and other materials. The STG document will help prescribers to standardize prescribing practices for the 50 or so most common conditions seen in hospitals. It will also focus rational drug use on the most cost-effective therapies.

RPM Collaboration with Project 2000

Implemented the National Drug Formulary in Hospitals

While RPM helped DIGEMID develop the NDF, the actual implementation of the new formulary standards was conducted in collaboration with Project 2000. At the time that RPM worked with DIGEMID on the NDF, Project 2000 became interested in incorporating rational drug use techniques into their programming in 18 hospitals around the country. The new NDF was seen as a vehicle for launching rational drug use activities. The implementation used DIGEMID's NDF guidelines and RPM's MTP methodology to introduce the NDF and have formularies adopted as routine practice in the Project 2000 hospitals. As a result, all participating hospitals developed and published their own drug formularies. This accomplishment was supported by new policies implemented by the hospital director in each hospital making NFD use officially binding for prescribers in each hospital. In the end, 21 regional and national hospitals around Peru are applying the NDF to improve drug selection, prescribing, and use practices.

Produced MTP Modules for Drug Management in Hospitals

In addition to implementing the NDF in 21 hospitals, RPM worked with Project 2000 to improve other aspects of drug management and rational use. For eight months RPM helped apply MTP modules or rational drug use in hospitals (URMH in Spanish), including P&T Committee, Drug Selection, Hospital Pharmacy, and Good Prescribing Practices modules. A full set of the MTP training modules is available in Annex 1 of this report (for further explanation of the MTP methodology please refer to the Implementation Strategy section of this report).

The following are key accomplishments of RPM's drug management work with Project 2000 hospitals and staff:

- About 800 people who manage drugs in 21 national hospitals participated in the project activities over a period of about 20 months.
- The key elements of drug management (such as selection, supply, distribution, and use) were all addressed in a structured, participatory, and sequential fashion.
- Eight MTP modules were designed, tested, revised, and applied to implement the rational drug use training and implementation program (see Annex 1 for program materials).
- Hospitals produced concrete, measurable products in a very short time. Results included the development and adoption of Hospital Formularies and Treatment Protocols and increased use of generic names (see the Discussion of Outcomes for Drug Management in Peru section below). The products were evaluated by the hospitals themselves using eight self-assessment indicators. Results of the self-assessments were posted on the MOH's Rational Drug Use Web site. Annex 2 contains a description and guide for using the Web site.
- Regional P&T committees have adopted the responsibility for continuing to support drug management at the regional and provincial hospitals. Recently developed work plans indicate that the P&T committees will continue to apply MTP modules to improve drug management in primary care facilities.

As mentioned above, once the modules were implemented in each Project 2000 hospital, the hospitals conducted a self-evaluation using eight of the RPM rapid drug management assessment indicators. These indicators included the following:

- Existence of a hospital P&T committee
- Percentage of drugs out of stock
- Percentage of drugs prescribed from the National Drug Formulary
- Percentage of prescribed drugs that are actually dispensed
- Percentage of patients who are exonerated of charges for the purchase of drugs
- Percentage of patients prescribed antibiotics
- Percentage of patients prescribed injections
- Percentage of drugs prescribed using generic names

Sponsored a Drug Information Needs Assessment

RPM sponsored a study of the need for drug information in participating Project 2000 hospitals. Once levels of need were established, RPM commissioned the design of an electronic drug information system for use by the different hospitals and regions. Ideally, this system can be expanded for use nationwide. DIGEMID has assumed responsibility and management of the drug information system. Annex 3 includes the study and an overview of the system that was designed to address the drug information needs.

Launched a Rational Drug Use Web Page

Project 2000 and RPM collaborated to develop and launch a Web page supporting rational drug use activities. RPM designed the Web page in coordination with the MOH's Institutional Development Office. The Web page contains the following elements:

- Description and content of MTP modules for URMH
- Frequently asked questions about URMH
- Indicators of drug use and management by hospital and quarter
- Subscription to URMH electronic conference

At the end of the RPM Peru project, the Web page was turned over to DIGEMID. DIGEMID will provide ongoing technical support and plans to launch the Web page on the Peru MOH Web site. As of December 30, 1999, the URL for the page was: *http://www.lanet.com.pe/urm.* After the MOH adopts the site, the URL will be: *http://www.minsa.gob.pe/urm.*

RPM Collaboration with ReproSalud

RPM's assistance to ReproSalud achieved results primarily in the policy and operational areas. In the early nineties, DIGEMID established a decentralized drug supply system, PACFARM, with regional purchasing and supply centers to sell drugs to MOH ambulatory units. These units, in turn, apply a modest markup, sell the drugs to patients, and repurchase drugs from PACFARM. At the time that DIGEMID was developing the PACFARM program, USAID planned to import drugs for use by ReproSalud facilities. PACFARM's revolving drug fund program appealed to the ReproSalud program, managed by the local NGO *Movimiento Manuela Ramos* as it researched methods to manage the drug donation. For this reason, MMR asked RPM to assist in the design of a national directive to formalize the PACFARM revolving drug funds. To assist in the design of this operation, RPM prepared recommendations on drug importation mechanisms, customs clearance, and donation of RH drugs to PACFARM.

RPM helped MMR design a revolving account mechanism so that drugs could be withdrawn from the PACFARM system at MOH units. Under the plan, CBO members able to pay for drugs were to be charged by the MOH facility. Those unable to pay would receive drugs at reduced prices. RPM helped define the drug management roles for the regional MMR offices and the MOH services and agreements were drafted and signed on the basis of these definitions. As a result, MMR and MOH regional offices have service provision agreements to benefit CBO members with RH drugs and other services.

In the end, USAID did not import the drugs, and the revolving drug fund program was never launched. However, the process of planning for the drugs helped ReproSalud and participating CBOs incorporate drug management issues into their routine responsibilities. The MTP methodology was introduced to one ReproSalud CBO in an attempt to create a system in support of the appropriate use of drugs. MMR adopted certain aspects of the MTP methodology but found that it did not completely respond to MMR's training and implementation approach.

Drug Use Education in Schools (URMES)

In the latter half of 1999, in response to an initiative by the municipality of Magdalena del Mar in metropolitan Lima and with support from Health Action International, RPM assisted with the pilot implementation of the Rational Drug Use in Schools (URMES) program in eight public schools.

URMES is a modular health education program that teachers and community volunteers can implement in primary schools. RPM designed and applied URMES in Ecuador. Each URMES module covers four aspects of a health condition: cause, symptoms, prevention, and treatment. In practice, one module is applied each month, and the modules address colds, diarrhea, scabies, malnutrition, parasitism, and anemia. Implementation follows a four-hour MTP session in which teachers review their experience with the previous module, learn about the four key aspects of the illness and how to use teaching materials, and then plan activities to apply the module within various subjects: science, language, arithmetic, and the like (for further explanation of the MTP methodology please refer to the Implementation Strategy section of this report).

In 1999 RPM worked with eight pilot schools in Magdalena del Mar to apply three of the eight URMES modules. The municipality of Magdalena del Mar evaluated the pilot program and found improvements in students' and teachers' knowledge of the prevention and treatment of health conditions. It also identified widespread enthusiasm for the program. The results of the evaluation were sufficiently strong and positive that Magdalena del Mar has approved a policy to implement all of the URMES modules throughout the municipality during the 2000-01 school year. The United Nations Children's Fund (UNICEF) and USAID have both offered support for the program.

Discussion of Outcomes for Drug Management in Peru

This section presents a discussion of some of the general outcomes for drug management of RPM's activities in Peru. The outcomes are grouped by drug management issues, specifically availability, rational use, qualitative improvements, and program sustainability.

Much of the information presented below is based on several drug management assessments conducted before and while RPM was active in Peru. First, DIGEMID evaluated the drug management situation in Peru[1] using RPM's rapid assessment methodology. The study was carried out in 1996 in 20 MOH facilities in four health regions. The facilities studied included hospitals, health centers, and health posts. The assessment detected serious problems in both drug logistics as well as rational use.

In 1998, RPM began working with project 2000 hospitals to improve rational drug use techniques via the MTP process. In March 1999, 21 Project 2000 hospitals conducted self-assessments, with each hospital using the same set of drug management indicators. In October 1999, nine of the 21 hospitals conducted follow-up assessments.

Sample baseline data from the 1996 DIGEMID assessment are presented in tables 1 and 3 below. Data from the two 1999 Project 200 self-assessments are found in Tables 2 and 4.

Drug availability

Two summary indicators of drug availability from the 1996 DIGEMID study were:

- *Average percent of a set of 40 tracer drugs available in service facilities.* This indicator is intended to show the availability of drugs determined to be essential for operation of the facility in order to treat the most prevalent and/or therapeutically important conditions
- *Percent of drugs prescribed actually dispensed.* This indicator measures the availability of drugs and the ability of the health facilities to meet the pharmaceutical needs of their users

The data collected by DIGEMID on these two indicators are presented in Table 1.

Table 1. Summary Indicators of Drug Availability in Peruvian Health Facilities, 1996

INDICATOR	HOSPITALS	CENTERS	POSTS
Average percent of a set of 40 tracer drugs available in service facilities	63%	74%	58%
Percent of drugs prescribed actually dispensed	38%	57%	40%

[1] Evaluación de la Situación de Medicamentos en el Perú. DIGEMID, Ministerio de Salud, Lima 1997.

According Table 1, less than two-thirds of the 40 tracer drugs were available in hospitals. Such a low level of availability indicated an inability to properly treat common illnesses. In addition, only two-fifths of prescribed drugs were actually dispensed by the hospital pharmacy, indicating that prescribed drugs were probably not available in the pharmacy. These findings were marginally better in health centers but the levels in health posts were essentially the same as in hospitals. Combined they show limited drug availability among the health facilities studied.

As mentioned above, in March and October 1999, hospitals participating in Project 2000's rational drug use program conducted similar drug management self-assessments. The findings for the same indicators, as reported in March (by 21 hospitals) and October 1999 (by 9 hospitals), are summarized in Table 2:

Table 2. Indicators of Drug Availability in Project 2000 Hospitals, 1999

INDICATOR	MARCH (21 hospitals)	OCTOBER (9 hospitals)
Average percent of a set of 40 tracer drugs available in warehouses and service facilities	89%	90%
Percent of drugs prescribed actually dispensed	73%	78%

The data reported by Project 2000 hospitals indicated a high level of availability in hospitals. Table 2 shows that by March 1999, after approximately eight months of participation in the URMH program, the availability of 40 tracer drugs in the 21 hospitals was 20 percentage points higher that the sample of hospitals in the DIGEMID study in 1996. The high level of availability found in March 1999 was unchanged six months later in a subset of 9 hospitals. It is important to note that the 1996 DIGEMID assessment and the two sets of self-assessments were not conducted in the same hospitals. Therefore, direct comparisons cannot be made. However, the DIGEMID assessment, which studied several types of facilities, was considered representative "snap shot" of the drug availability situation in the country as a whole in 1996.

For drugs actually dispensed, by eight months into the program, 21 hospitals were dispensing 73% of drugs prescribed, which shows significant drug management capacity within the hospitals. This indicator increased to 78% in the subset of nine hospitals in October 1999. The 1996 pre-RPM assessment by DIGEMID found that DIGEMID hospitals were dispensing only 38% of drugs prescribed.

An additional indicator, the *percent of drugs in the hospital pharmacy not present on the hospital formulary*, was used by Project 2000 hospitals. It measures how well hospitals are eliminating drugs that are not on the hospital's formulary list (or non-essential drugs) from stock. This indicator was 29% for 21 hospitals in March 1999 and 24% for 9 hospitals in October 1999, suggesting that participating hospitals are increasingly eliminating non-essential drugs from their inventories.

Though the DIGEMID assessment was conducted in a different sample of hospitals from those in the Project 2000 orbit, the combined results suggest a tendency toward improved drug availability.

Rational drug use

In addition to drug availability, the 1996 DIGEMID study looked at several rational drug use indicators. In 1996, DIGEMID reviewed the following:

- *Percent of drugs prescribed by generic name,* since prescribing by generic name helps control costs
- *Percent of drugs prescribed from the national Essential Drugs List (EDL),* which contributes to cost control and proper prescribing and use practices

The results for rational drug use from the 1996 DIGEMID study are shown in Table 3.

Table 3. Summary Indicators of Drug Use in Peruvian Health Facilities, 1996

INDICATOR	HOSPITALS	CENTERS	POSTS
Percent of drugs prescribed by generic name	31%	58%	53%
Percent of drugs prescribed from EDL	45%	63%	65%

The results showed that in hospitals, less that one-third of drugs were prescribed using the generic name, meaning that 2/3 are prescribed by commercial, or brand, name. In addition, in the hospitals surveyed less than half of drugs prescribed are listed on the national EDL, meaning that more than half are not authorized by the MOH for prescription in public facilities.

These same indicators were measured in the self-assessment conducted by the 21 Project 2000 hospitals. Results reported in March 1999, after 6 months of the program, and in October 1999 suggest improvements in rational drug use, as shown in Table 4 below.

Table 4. Indicators of Rational Drug Use in Project 2000 Hospitals, 1999

INDICATOR	MARCH (21 hospitals)	OCTOBER (9 hospitals)
Percent of drugs prescribed by generic name	64%	75%
Percent of drugs prescribed from EDL	73%	81%

Table 4 reveals that in March 1999, after six months in the rational drug use training program, the 21 hospitals prescribed 64 percent of all drugs by generic name. In October 1999, seven months later, this figure had increased to 75 percent. When compared, these figures indicate improvement in rational drug use practices among the hospitals studied.

Findings for the second rational drug use indicator, percent of drugs prescribed using the EDL, also show improvement over the seven months. While in March 1999 hospitals prescribed 73 percent of drugs from the EDL, by October 1999, with 13 months total of RPM programming, prescribers had improved this figure to 81 percent.

The March 1999 figures indicate rational drug use levels of about 30 percentage points higher than the 1996 DIGEMID figures. By October 1999, a subset of nine Project 2000 hospitals had achieved reports of 75% or more for both indicators, and increase of about 40 percentage points over the 1996 DIGEMID findings. This suggests that hospitals participating in the Project 2000 program exercise better prescribing practices than those that had not yet received RPM programming and that drug use practices improved over time.

RPM also reviewed some additional rational drug use indicators, specifically the development of P&T committees and the use of drug formularies. As mentioned in the section on Challenges facing RPM/Peru Implementation, prior to RPM programming:

- Hospital P&T committees did not exist or were inactive in the hospitals surveyed
- Hospital formularies, where they existed, were limited to informal lists of most frequently procured drugs

By December 1999 at the end of the RPM project, all of the participating Project 2000 hospitals had active P&T committees and officially sanctioned Hospital Formularies.

Qualitative improvements

Some aspects of drug management in hospital pharmacies have reportedly been qualitatively improved. Using the MTP module structure, RPM assigned pharmacy personnel the task of developing pharmacy improvement plans and provided the comparative information to accomplish the task. As a result, most of the Project 2000 hospitals have developed pharmacy improvement plans that include specific structural and functional changes. For example, the Yarinacocha Maternal-Child Hospital began to build new pharmacy with improved functionality and the Hipolito Unanue Hospital pharmacy has opened a drug dispensary in the emergency room.

In addition, hospitals have begun to procure drugs based on morbidity profiles rather than solely historical consumption. Drug storage has been consolidated in the hospital pharmacy following appropriate technical and storage standards. Drug distribution, control, dispensing, and information provision to patients have also been standardized using guidelines for the organization and operation of hospital pharmacies. RPM jointly developed these standards with the hospitals, in the absence of such norms from the central MOH.

Program Sustainability

The following facts support the sustainability of RPM project activities in Peru:

1. Hospital personnel have stated that they consider the URMH program to be their own because the MTP methodology lets them design and manage the drug management improvement process based on their own institutional situation and goals.
2. P&T committees have become important, recognized leaders in drug management in most of the hospitals, especially in the development and maintenance of hospital formularies. This suggests that their new role and expertise will continue to be utilized after the end of the RPM project.
3. Regional P&T committees have developed work plans for applying MTP drug management modules in secondary health services (small hospitals, health centers, and posts) after the end of the RPM project in Peru.
4. The revolving drug funds that were implemented in most of the Project 2000 hospitals allow the hospitals to maintain and increase their financial resources and are extremely popular with hospital management. This institutional support indicates that the RDFs will remain in place after the end of RPM programming.
5. The indicator-based assessments of key drug management and rational drug use functions in hospitals have been incorporated into a popular web page. Each participating hospital measures the indicators periodically and submits the results to the web page. After viewing the web page and assessing its benefits, a large teaching hospital not originally in the URMH (Hospital Loayza) recently decided to participate, apply the URMH training modules, and submit information to the web page. The web page is set up to handle 21 hospitals, but can easily be expanded, with MOH approval, to include many additional hospitals.
6. DIGEMID has stated that it will continue to promote the use of MTP modules to expand the drug management training program to other regions. A formal agreement between DIGEMID and Project 2000 has been drafted to this effect.
7. Two World Bank Peru projects have declared their intent to apply the MTP drug management modules in new sites and regions around the country.
8. The new National Drug Formulary with which RPM assisted has been officially published and distributed to all MOH facilities, where it is being applied to improve drug selection and use.
9. The national Standard Treatment Guidelines are nearly completed and, once published and distributed to all MOH facilities, will be a strong stimulus for institutionalizing rational drug use.
10. The World Bank's Basic Health and Nutrition Project is negotiating with MSH to adapt and apply the MTP drug management modules in eight additional health regions.

Activities Not Completed

The following activities were included in work plans but were not completed.

1. USAID planned to import drugs for use by ReproSalud facilities. PACFARM's revolving drug fund program appealed to the ReproSalud program, managed by the local NGO *Movimiento Manuela Ramos* as it researched methods to manage the drug donation. For this reason, MMR asked RPM to assist in the design of a national directive to formalize the PACFARM revolving drug funds. RPM helped MMR design a revolving account mechanism so that drugs could be withdrawn from the PACFARM system at MOH units. In the end, USAID did not import the drugs, and the revolving drug fund program was never launched. However, the process of planning for the drugs helped ReproSalud and participating CBOs incorporate drug management issues into their routine responsibilities.

2. The SHIP activities were never funded and did not take place. The SHIP-North and South projects were USAID-funded contracts with University Research Corporation and CARE, which included systems for the distribution and rational use of pharmaceuticals in health centers in Chiclayo and Puno health regions. RPM was asked to assist with training in drug selection, rational prescribing and cost-efficient therapies as well as install the RPM inventory control software, INVEC-2. A further activity was discussed, specifically to develop a manual for revolving drug funds.

3. The MTP module on Drug Information was not implemented in the Project 2000 hospitals. Project 2000 management requested that this activity be delayed until February 2000, after the end of RPM programming.

4. With respect to ReproSalud, RPM did not complete the development of the drug management checklist for MMR agreements with the MOH. The checklist would help ensure adequate RH drug supplies in MMR service facilities. MMR decided in November 1998 to suspend drug-related work in the ReproSalud project and RPM was so advised in December, halting further development of the checklist.

Likely Needs at End of Project

Rational drug use programming, including implementation of the National Formulary and Standard Treatment Guidelines, should be expanded to the rest of the country under the auspices of DIGEMID (possibly with financial support from PAR, a World Bank project). Such an effort primarily would be the responsibility of the regional drug directorates (DIREMID) and regional P&T committees, with direct participation and support from regional hospitals. This would follow the organizational example of San Martín, Ucayali and Ica health regions.

DIGEMID did not issue legal regulations to incorporate P&T committees into the organizational structure of the hospitals and establish revolving drug funds for drug management. These two points represent uncertainty for hospital managers and could cause resistance to adoption of these drug management tools.

Another area that needs support and development is the integration of drug management into the various government-supported insurance schemes, including the school and maternal insurance programs. The former of these vertical programs has been a major impetus for the adoption of generic drugs by Peruvian hospitals. However, the lack of coordination between it, DIGEMID, and PACFARM has led to important discrepancies between the National Formulary and the insurance program's approved drug lists.

Programs supporting improved drug management should be extended to all Project 2000 health establishments and to facilities in the other 22 health regions. Drug management modules were applied in all health centers of San Martín, Ucayali and Ica health regions under the guidance of the regional hospitals. Similar drug management activities need to be replicated in the rest of the country under auspices of DIGEMID. However, DIGEMID will need financial support, possibly from PAR, a World Bank project.

Several other activities were discussed with Project 2000 management for future development as time and financing permit:

1. MTP modules on Hospital Pharmacy Management and Drug Utilization Studies should be designed and implemented.

2. DIGEMID did not issue legal regulations to incorporate P&T committees into the organizational structure of the hospitals and establish revolving drug funds for drug management. These two points represent uncertainty for hospital managers and cause resistance to adoption of these management tools.

3. A software system is needed to support Hospital Pharmacy Management, including point of sale, inventory management and basic accounting and cash flow management.

Drug-use education in schools has been shown to improve students', teachers' and parents' knowledge and behavior about diseases. The AVISA-URMES pilot activity in Magdalena del Mar municipality in Lima can be expanded to the rest of the schools in the municipality. As experience is gained, the program would benefit from institutionalization in a national sponsoring institution and promoted through health services of the MOH.

Finally, a management information system is needed to support hospital pharmacy management, including point of sale, inventory management and basic accounting and cash flow management.

Lessons Learned

1. To have a strong, positive, and long-term impact, the Peru MOH needs continued support to develop capacity in all aspects of sound drug management systems. This includes capacity building in management support systems and the legal and policy aspects of a functioning drug management system.

2. Experience has amply demonstrated that P&T committees are in may cases mere formalities and often do not fulfill the functions they were set up to do. Since effective P&T committees are so critical in upholding the commitment to rational drug use, they often need training to help them understand their roles and responsibilities. RPM/Peru showed that assigning monthly tasks is a good way to augment their skills and to keep them in operation.

3. Tools are not enough. A rational pharmaceutical management system consists of tools and procedures. RPM/Peru worked with hospitals to build and organize effective drug management systems.

4. Upper management must participate. The hospitals with directors committed to rational drug management are the ones that improved the most.

Annexes

Four annexes supplement this report. They are listed below and available separately upon request.

Annex 1: A compendium of eight rational drug use MTP modules used by Project 2000 hospitals.

Annex 2: CD-ROM disc with the contents of the Peruvian MOH's Rational Drug Use Web site. Like the Web site, the CD-ROM contains MTP modules, Frequently asked questions, Drug-use indicators for 21 hospitals, List serv subscription guidelines.

Annex 3: Report on drug information needs in Peruvian hospitals, accompanied by an overview of the information system proposed to address drug information needs.