

RPM

RATIONAL PHARMACEUTICAL MANAGEMENT PROJECT

EVALUATION BRIEFING BOOK

**RATIONAL PHARMACEUTICAL
MANAGEMENT PROJECT**

**MANAGEMENT SCIENCES FOR HEALTH
COOPERATIVE AGREEMENTS**

JUNE 1997



MANAGEMENT SCIENCES FOR HEALTH



U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT



UNITED STATES PHARMACOPEIA



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RPM-Worldwide and RPM-Russia Staff

Rational Pharmaceutical Management Project
Cooperative Agreement Number HRN-5974-A-00-2059-00

Russia Rational Pharmaceutical Management Project
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INTRODUCTION

The RPM Project consists of four cooperative agreements (CAs). These include one each awarded by USAID to Management Sciences for Health (MSH) and the United States Pharmacopoeial Convention (USP) for work to be carried out worldwide, and one each to the same two organizations for work to be carried out in the Russian Federation.

USAID awarded the worldwide CA in September 1992 and the Russia CA in January 1995. Prior to the award of the separate Russia CA, RPM did work in Russia using funds provided through an add-on to the worldwide CA. This add-on funding also provided for work in two other NIS countries, that is Kazakhstan and Ukraine.

The purpose of this briefing book is to describe the work carried out to-date through the MSH cooperative agreements. The book is divided into two parts. The first part covers the "worldwide CA" and the second part covers the "Russia CA." The second part covers all work carried out in Russia, Kazakhstan, and Ukraine, even though some of the funding was channeled through the worldwide CA. The organization of the two parts are broadly similar, with some variation occasioned by differences in mission and program organization. When the project is referred to as "RPM," it represents the RPM-Worldwide project, the Russia CA is referred to as RPM-Russia.

MSH

MSH is a Massachusetts-based non-profit corporation founded in 1972. MSH's primary mission is to provide technical assistance aimed at *bridging the gap between what is known and what is done about improving health status of disadvantaged populations*. Since its inception, MSH has managed long-term projects or provided short-term technical assistance in 114 countries. The current portfolio includes long term activities in 24 countries. This work has been funded for the most part by donors and international organizations such as USAID, WHO, UNICEF, the World Bank, the Asian Development Bank, the Inter-American Development Bank, Danida, and JICA. In 1996 the value of work funded through these and other agencies was \$32 million.

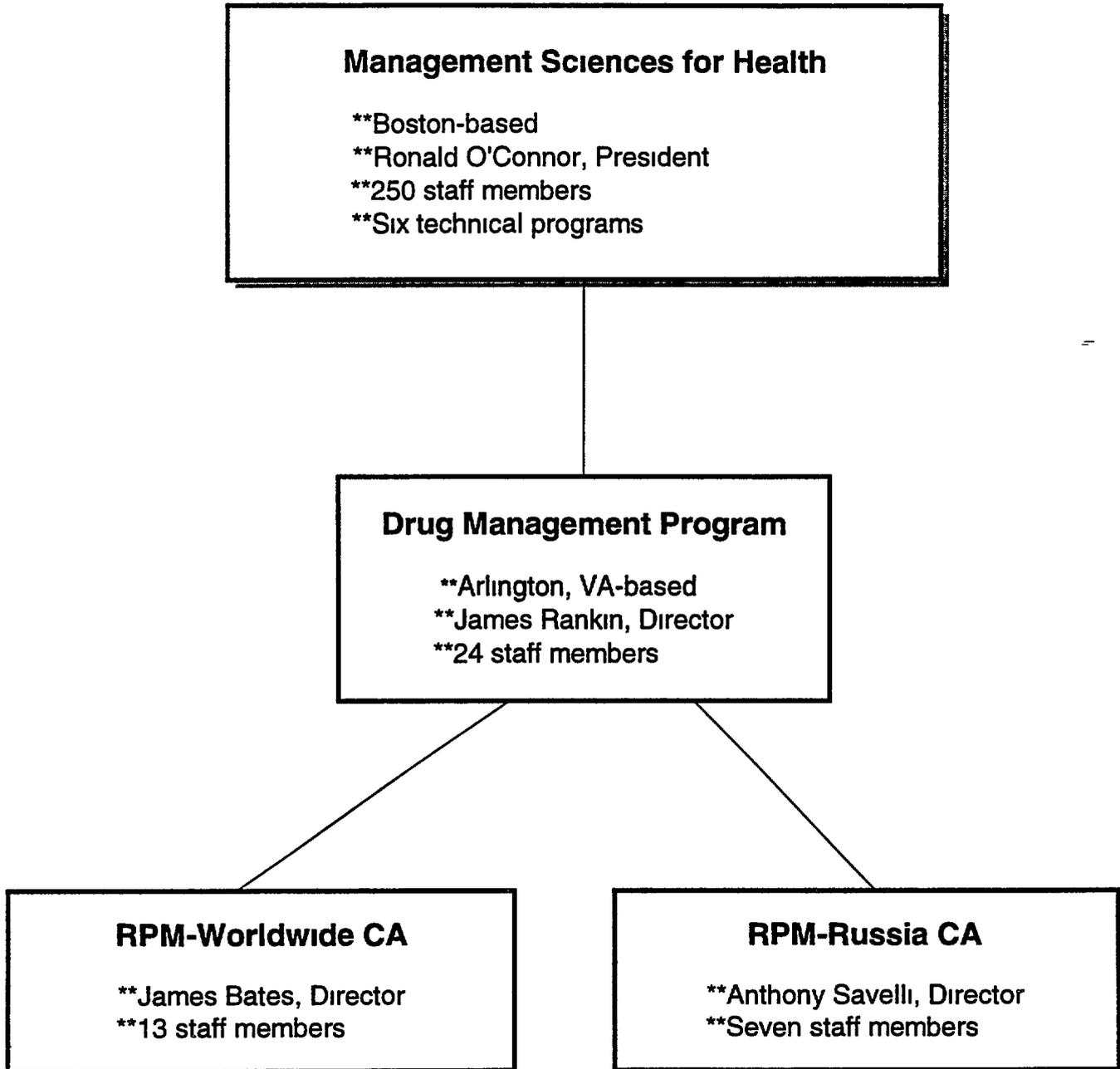
At present, MSH has approximately 250 staff members of 41 different nationalities organized into six technical programs. The technical programs include drug management, health financing, management training, management information systems, strengthening health services, and population. The Drug Management Program is based in Arlington, VA, while all the others are based in Boston.

DMP

Within MSH, it is the Drug Management Program (DMP) that implements the RPM CAs. The DMP is directed by James Rankin and has a staff of 24. Within the DMP, the RPM-Worldwide CA is directed by James Bates and has a staff of 13, and the Russia CA is directed by Anthony Savelli and has a staff of seven. The Russia CA also has an office in Moscow. Between the two CAs, there is significant sharing of both staff and technical activities.

Figure One, below, shows the relationships between the various components of MSH and RPM that have been mentioned.

Figure One MSH and the RPM Cooperative Agreements



RPM-WORLDWIDE COOPERATIVE AGREEMENT

I Overview

A Project Objectives

The project description prepared by USAID in 1992 provides the following summary of the RPM Project's goal, purpose, and intended activities

Goal To improve the health status of target populations in less developed countries (LDCs) through improvements in allocation and use of financial, human and information resources within the health sector

Purpose To demonstrate that improvements in access to affordable, quality care in developing countries can occur through (1) expanding the financial base from which cost effective health activities can be organized and implemented, and (2) improving the allocation, use and management of health sector resources, both public and private, and (3) enhancing access, dissemination and utilization of unbiased drug information

Technical Areas and Activities RPM's goal and purpose are to be achieved through work in three technical areas, which are described succinctly as follows

- Establishment and automation of drug registration systems,
- Strengthening and rationalization of public sector pharmaceutical procurement and supply management, and
- Expansion of drug information resources and promotion of rational use

Within these technical areas, RPM was to provide such services as long-term assistance at the country level and information dissemination. Examples of specific modes of operation to carry out included diagnostic assessments of pharmaceutical sectors, policy analysis and dialogue, training, studies and operations research, communications strategies and social marketing, and collaboration with other donors

B Brief History

USAID awarded the RPM-Worldwide CA to MSH in September 1992 for a five-year period. The total authorized funding is \$9,830,000. As of March 1997, total obligations were \$7,937,311.

Shortly after the award, in December 1992, the MSH Drug Management Program relocated from Boston to Arlington, VA. The first technical activity was development of an indicator-based approach to assessment of pharmaceutical sector operations. RPM staff began country assessments in June 1993, and over the ensuing year, they carried out assessments in Ghana, Ecuador, Nepal, El Salvador, the Eastern Caribbean, Ukraine, and Mozambique.

In March 1994, RPM selected Ecuador, Nepal, the Eastern Caribbean and Mozambique as the country arenas in which to implement long term assistance programs. Criteria for selection included the following:

- Need for assistance in RPM's technical priority areas, as demonstrated by the results of the assessments,
- Ministry of Health counterpart interest in having an RPM program,
- USAID Mission receptivity to including an RPM program within the health portfolio, and finally,
- Determination by RPM that reasonable progress is feasible

As the assessment and country program work took place, work also went forward on developing tools for pharmaceutical management, including such products as the *Rapid Pharmaceutical Management Assessment An Indicator-Based Approach* manual, the *International Drug Price Indicator Guide*, and computer software products such as the INVEC-2 inventory control program, PASS for analysis of drug prescribing practices, ESTIMED for quantifying drug needs, and ECPRO-2 for managing competitive procurements.

In 1995 a very important change took place when USAID introduced the "field support" funding strategy. For RPM this development brought important consequences. Core funding for central-level programs was dramatically reduced, and for country-level programs it was eliminated. RPM was instructed to seek the funding it needed for country work through field support allocations of individual USAID missions.

On balance, RPM has adjusted well to this new arrangement. Where country programs are concerned, the shift in funding strategies has resulted in significant program expansion. Prior to 1995, when country work was supported by core funds, USAID had restricted RPM's work to just four countries, that is Ecuador, Nepal, the Eastern Caribbean, and Mozambique. With the shift to field support, however, RPM has been allowed to seek funding from any country mission or central bureau in need of the project's services. In 1996 and 1997, RPM added programs in Poland, Peru, Zambia, Central Asia, Bangladesh, Hungary, and the REDSO Eastern and Southern Africa region to its portfolio.

For central-level programs, it has been possible to preserve reasonable momentum. Even with reduced funding, development of the management tools listed above continued, though at a reduced pace. Following a 1995 low point, however, core funding has increased for 1996 and 1997, with the result that it has been possible to add new activities, including operations research on drug needs for reproductive health problems, development of an approach to strengthening drug management in support of the integrated management of childhood illnesses (IMCI) approach, and development of new training materials, based on the new edition of *Managing Drug Supply*. Still other activities are expected to begin in the coming year, although they are not yet well defined. Among these are work in the areas of HIV/AIDS, polio eradication, and antimicrobial resistance.

As both funding and the portfolio of programs and activities has increased since 1995, so too has the size of the staff. RPM-Worldwide started out in 1992 with six full-time staff members, including three technical staff, an office manager and two support staff. At present, the project has the equivalent of nine full-time staff members, but this growth is much greater than just the totals would indicate. The technical staff has grown from three to six full-time equivalents and administrative staff now support the worldwide and Russia CAs.

II STAFFING

The RPM-Worldwide Project, as noted, is based on a cooperative agreement with MSH. Under this arrangement, all MSH Drug Management Program staff are available to work on the project. As noted in the Introduction, the DMP has 24 staff members, including some regular part-timers not based in this office. This number includes eight management specialists, two physicians, six pharmacists, one veterinarian, one social scientist, one computer support specialist, and five support staff members. In addition, the DMP has affiliated staff members and consultants, who, though not based in the Arlington office, contribute to the program on a very regular basis.

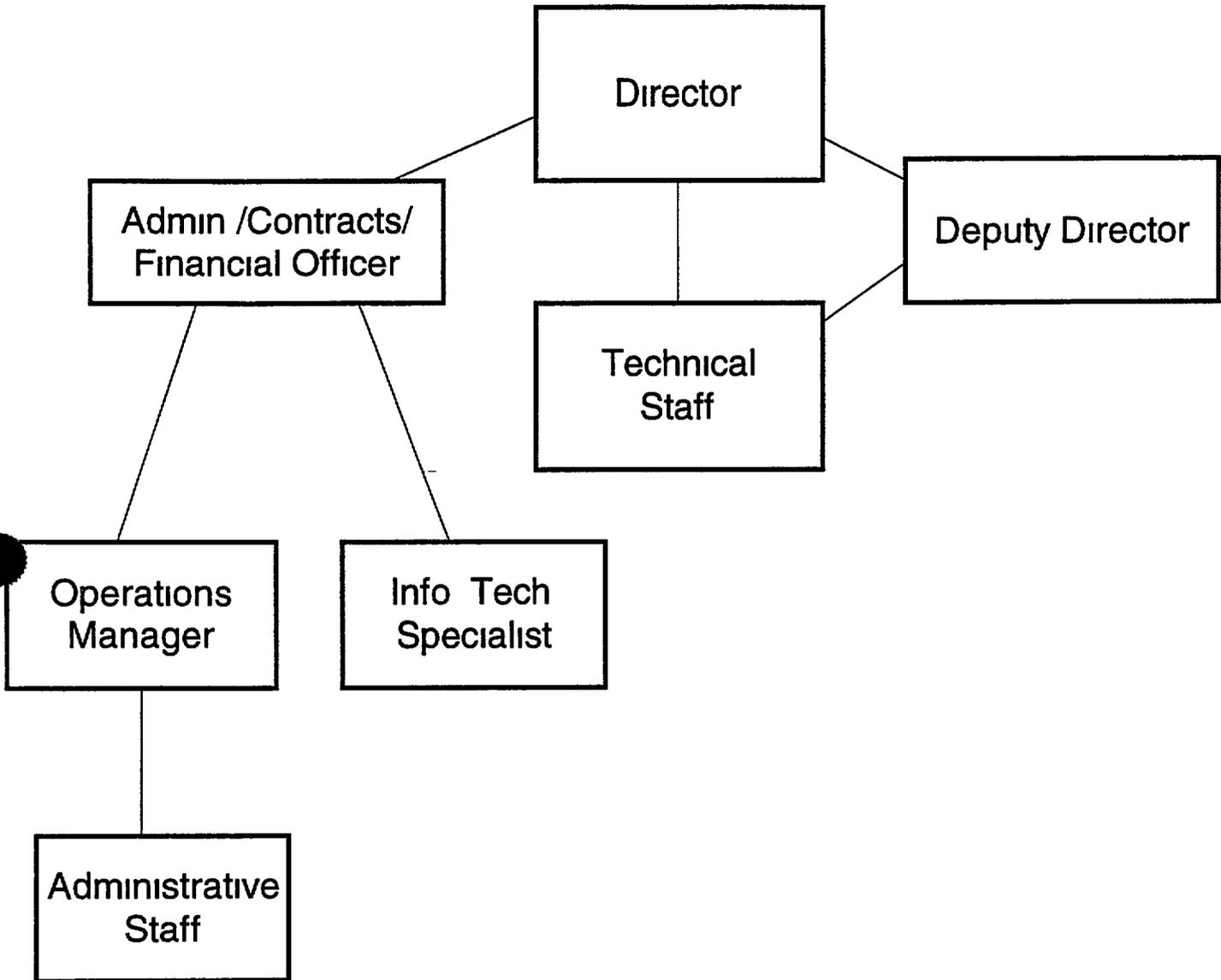
From among the DMP staff, five of the technical staff are assigned full time to RPM-Worldwide and two others split their time between the Worldwide and Russia CAs. Adding all this up, RPM-Worldwide has the equivalent of 8-to-9 full-time staff members.

These staffers and their primary responsibilities are summarized in Table One. In addition, their cvs are also included in Annex Two. Figure Two shows RPM-Worldwide management structure.

Table One RPM Project Staff

Name	Position	Primary Responsibilities
James Bates	Director	Overall project management Coordination of all country programs Nepal Program
Elvira Beracochea	Deputy Director	Coordination of central programs Reproductive Health Activity Latin America Programs
Michael Gabra	Senior Program Associate	Zambia Program REDSO Eastern and Southern Africa Program
Douglas Keene	Senior Program Associate	IMCI Support Activity HIV/AIDS Activity
Thomas Moore	Senior Program Associate	Mozambique and Central Asia Programs (Also works on Russia CA)
David Nelson	Senior Program Associate	Ecuador Program (Also works on non-RPM activities)
Maria Miralles	Senior Program Associate	Mozambique and Training Programs (Also works on non-RPM activities)
Tomoko Fujisaki	Senior Program Associate	Reproductive Health Activity (Also works on non-RPM activities)
Olya Duzey	Senior Program Associate	Poland, Ukraine, Hungary Programs (Also works on Russia CA)
Julie McFadyen	Information Systems Coordination/Editor	Tools Development and Information Dissemination Eastern Caribbean Program (Also works on Russia CA)
Jennifer Jones	Finance/Contracts/Ad- ministrative Officer	Finance and Contract Management (Also works on Russia CA)
Crispin Vincent	Information Technology Specialist	Computer Network Support (Also supports Russia CA)
Maria Chomyszak	Operations Manager	Office Management (Also supports Russia CA)
Monica Villagran	Senior Program Assistant	Support Services
Valarie De Pass	Senior Program Assistant	Support Services (Also supports Russia CA)

Figure Two RPM-Worldwide's Management Structure



III PROGRAM DESCRIPTION

A Summary

RPM-Worldwide's activities may be broadly divided into two groups

- Country programs, funded by field support allocations provided by USAID missions, and
- Central-level programs, funded by core funds allocated by the Global Bureau, or field support or OYB transfer funds allocated by Washington-based regional bureaus

The purpose of this section is to provide information on the content and evolution of this portfolio

1 Country Programs

The country programs consist of activities intended to fulfill the project's technical mandate. They consist for the most part of work that evolved from the original priority technical areas already noted in the Overview, that is

- Automation of drug registration,
- Procurement and inventory management, and
- Drug information and rational use

Listed in the order in which they started, RPM-Worldwide's country programs are Ecuador, Nepal, the Organization of Eastern Caribbean States, Mozambique, Poland, Peru, Zambia, Central Asia, REDSO Eastern and Southern Africa (ESA), and Bangladesh. Very recently RPM has received word that there will probably be a program in Hungary.

Of these, the funding assumptions for Ecuador, Nepal, Eastern Caribbean, Mozambique, Zambia, REDSO ESA, Bangladesh, and Hungary are such that they have had or are expected to have durations of two or more years. Poland and Central Asia have limited funding and objectives and are not expected at this time to be ongoing. Peru is different, because in this case, the USAID country mission has allocated funds, but has not yet determined what should be done with them.

Table Two gives a sense of the complexity of the environments in which RPM's country programs take place, and the limited amounts of funding available for dealing with the many problems that these environments present.

Table Two Pharmaceutical Sector Profiles of Selected RPM Countries

Measure	Ecuador 1994 12 milion	Nepal 1993 19 6 milion	Mozambique 1994 16 1 milion	Zambia 1996 8 9 milion
Product Selection				
Total Available in Country	10,000+	10,000+	660	3,000+
Total Essential Drug List	438	261	383	154 (under preparation)
Public Sector				
Annual MOH Drug Budget	\$5,800,000	\$5,000,000	\$10,000,000	\$11,800,000
Total MOH Health Facilities	1,400+	1,211+	1,166	877
% Indicator Products Available at Health Facilities	46%	60%	59%	55%
% Facilities with Standard Treatment Guidelines	70%	4%	100%	41%
Private Sector				
Estimated Total Value	\$213,615,000	\$57,000,000	No Estimate	\$35,000,000
Number of Manufacturers	120	17	2	7
Number of Distributors	100+	1,315	1	35
Number of Licensed Retailers	3,100+	8,014	60	26
RPM Funding				
Amount Spent	\$701,005	\$723,807	\$432,863	\$42,232
Years	1994-97	1993-97	1994-97	1996-97

Note The years indicated are those in which RPM made its country assessments. The data presented for each country are in some cases from different years. The profiles are thus composite. They may not be taken as definitive descriptions, but rather they are given as an indication of the relative complexity of the environments in which RPM works. All amounts are US dollars.

2 Central Level Programs

In addition to the country programs, RPM also has a portfolio of technical programs originating at the central level. Generally speaking, they may be divided into two groups:

- Tools' Development and Information Dissemination, and
- Studies and Operations Research (OR)

These activities also fall generally within the three priority technical areas summarized above. They are intended to develop management tools or approaches to operations research that will have worldwide application, not only within the RPM countries, but also beyond.

Under the Tools' Development Program, RPM-Worldwide has developed and disseminated such products as the manuals *Rapid Pharmaceutical Management Assessment: An Indicator-Based Approach*, *The International Drug Price Indicator Guide*, and the computer software products INVEC-2, PASS, ESTIMED and ECPRO-2. Work is just beginning on a specialized assessment tool for logistics management and prescribing practices in support of IMCI, and on a set of training materials based on the recently published second edition of *Managing Drug Supply*.

For studies and operations research, the principal activity so far is development of an approach for estimating the drug and expendable supply costs of reproductive health programs. USAID has also indicated that RPM should be prepared to assist with OR activities related to HIV/AIDS, polio eradication and antimicrobial resistance.

It should also be noted that a number of major studies have taken place with the context of the country programs, two important examples being *Pharmaceutical Supply System in Ecuador: Evaluation and Proposal for Reform*, a financial evaluation of the parastatal drug procurement and distribution agency in Ecuador, and *Nepal Drug Cost-Sharing in Pharmaceutical Distribution*, a feasibility study for implementing large scale public interest drug sales activities. Details of these and other studies carried out at the country level will be found in the country program descriptions that follow.

3 Demand for RPM-Worldwide's Services

Since 1955, there has been a steady upward trend in demand for RPM-Worldwide's services. As shown by Table Three, this can be measured both in terms of increases in numbers of programs and activities and increases in funding levels.

Table Three Increase in Demand for RPM's Services

	1995	1996	1997
Country Level	Ecuador Nepal Mozambique Eastern Caribbean Poland	Ecuador Nepal Mozambique Eastern Caribbean Poland Zambia Central Asia Peru	Ecuador Nepal Mozambique Eastern Caribbean Poland Zambia Central Asia Peru REDSO ESA Bangladesh Hungary
Funding	\$970,000	\$1,052,000	(\$1,910,000)
Central Level	Tools' Development	Tools' Development Reproductive Health	Tools' Development Reproductive Health IMCI MDS2 Training HIV/AIDS Polio Eradication Antimicrobial Resistance
Funding	\$200,000	\$300,000	(\$925,000)
Total Funding	\$1,170,000	\$1,352,000	(\$2,835,000)

Note The funding levels for 1995 and 1996 represent obligations made. The funding levels indicated for 1997 are based on preliminary estimates provided to RPM by the Global Bureau. They reflect amounts expected to be obligated.

4 Status of Implementation

The country and central-level programs being implemented by RPM-Worldwide vary both in size (or funding level) and in status of implementation. Some are well established, that is, have been underway for a year or more. Others are just getting under way now. Still others are incipient, that is, they have been authorized and have received some attention, but are still in the planning stage.

Table Four classifies the activities in RPM's portfolio according to status of implementation. For those activities that are well established, detailed descriptions follow. For those that are newly underway or incipient, very brief summaries will be found at the end of this section.

Table Four Implementation Status of RPM-Worldwide Programs

Implementation Status	Country Level	Central Level
Established	Ecuador Nepal Eastern Caribbean Mozambique Zambia Poland Central Asia	Tools' Development and Information Dissemination Reproductive Health
Recently Under Way	REDSO Eastern and Southern Africa	Support for IMCI MDS2 Training Materials
Incipient	Peru Bangladesh Hungary	HIV/AIDS Polio Eradication Antimicrobial Resistance

Detailed Descriptions of Established Activities

For the nine established country and central programs, there follow detailed descriptions of progress made and resources brought to bear. Each description contains a list of key documents or products. A complete set of all of these materials is being provided for the Evaluation Team.

B Ecuador

Program Managers David Nelson and Elvira Beracochea

1 Strategic Importance

The overall purpose of the RPM program in Ecuador is to provide support to the Ministry of Health for the implementation of a decentralized pharmaceutical management system and related policy reform activities. The rationale of this purpose is based on the following:

- RPM contributes to two of USAID/Ecuador's strategic objectives
 - SO B1 - Improve the quality of primary and secondary services by assisting in the design and implementation of a rational and decentralized drug management system
 - SO B2 - Expand access to PHC services by assisting in decentralization and in redefining the role of national and provincial authorities

- A recent indicator-based study had been carried out under the USAID/LAC Health and Nutrition Sustainability Project (1992) which identified serious procurement and logistics problems. Therefore, RPM planned and carried out a more focused study to determine alternative solutions to these problems. The study report, entitled "*Sistema de Suministro de Medicamentos en el Ecuador Evaluacion y Propuesta de Reforma* (1994)," included a proposal to improve the supply system. This study was carried out in collaboration with FASBASE, a World Bank funded-project, those objectives included assisting the MOH by procuring the seed stock for starting cost-recovery operations in the project's pilot health areas (*areas de salud*). The collaboration with FASBASE provided an opportunity for RPM to develop a common drug management approach with other donors (World Bank, WHO/PAHO, UNICEF, etc.) At central and local levels.
- Based on RPM's recommendations to improve procurement, the incumbent Minister of Health included the transformation of CEMEIM (the procurement agency) in his 1995-96 National Health Policy Statement. A new public-private organization would pool and manage drug procurement for all public health facilities, and in the future for NGOs, private pharmacies, etc. Unfortunately, this plan fell by the wayside when a new Minister of Health was appointed in August 1995.
- RPM had identified favorable conditions to develop a drug information center in the School of Basic Medical Sciences of the Central University of Ecuador.

2 Needs Assessment

Date November 1994

Key Findings and Conclusions

Central Level

CEMEIM

- The public sector market (MOH, social security, and armed forces) represented a modest share (10%) of the country's total drug sales in 1993 (US\$213.6 million).
- CEMEIM staff apparently lacked the technical skills to effectively manage drug procurement. The ABC analysis indicated that 46 drugs, some of which were considered non-essential, represented 80% (US\$2.4 million) of the 1993 budget. CEMEIM had programmed the procurement of 97 products, but purchased 124. Lack of transparency in the tendering process was a major concern. Improvements in product selection and procurement methods would result in significant savings.
- CEMEIM's inventory control system was incomplete and outdated.
- Price markups were not related to costs. Accounting procedures did not meet general accounting principles and a balance statement could not be made.

Registration and quality assurance

- Drug registration was not comprehensive Only 39% of a sample of 381 products were actually registered There was no active mechanism to enforce good manufacturing practices or quality

Role of the MOH

- MOH lacked outreach capacity for supervising and supporting the drug management system in local health areas

Local Level

- A number of specific problems with drug use were identified 37% of the prescribed drugs were not in the national drug formulary, 51% were incorrectly labeled for dispensing, and the national standard treatment guidelines were not available in the health facilities
- Enforcement of prescription by generic names was not effective (only 39% of the drugs were prescribed using their generic names)
- Patients paid for their drugs in 55% of the studied encounters, but procedures for accounting for exemptions and revenue, and for conserving these funds for purchasing new stock were not in place
- Accounting for stock was weak because inventory control systems at storage and health care facilities were not operational These systems could not provide the simple data on balances and consumption required for estimating needs and planning purchases
- In spite of cheaper prices, CEMEIM's drug distribution was considered unreliable because of late, incomplete, and incorrect shipments of drugs, which in many cases were close to expiration

3 Work Plan

Dates March 1994 - September 1997
October 1994 - September 1995
Fiscal year 1996 (revision)
April 1996 - March 1997
November 1996 - March 1997 (revision)
1997 (in progress)

Summary of Key Activities

Following completion of the 1994 study, and based on expressions of interest by MOH, RPM expected to participate in a major effort to restructure CEMEIM as an "organization mixta," that is, a partnership between the existing parastatal operation and a non-profit foundation. From March through July 1995, RPM engaged in lengthy preliminary discussions with both MOH and FASBASE about how this process would be carried through. The Ministry put forth policy statement incorporating a number of key RPM recommendations. Then in August 1995, following personnel changes, the Ministry distanced itself from plans to restructure CEMEIM. In October 1995, RPM decided to de-emphasize work at the central level and collaborate with FASBASE and *area de salud* staff on a stream of activities intended to develop a decentralized model for drug management at the *area* level. The decentralization activities have included

- Health Area Pharmaceutical Management Assessment (October 1995-February 1996) Assisted by RPM, twenty-four trained local staff planned and carried out a rapid self-assessment (data collection, analysis, interpretation, and report writing) in the eight FASBASE pilot *areas* and 10 non-project *areas*. The assessment methods were based on the RPM manual, *Evaluacion Rapida del Manejo de Productos Farmaceuticos Un Enfoque a Base de Indicadores*. At the same time, RPM reviewed computer operations needs and capacities in preparation for the installation of INVEC-2, RPM's specialized inventory control software. FASBASE would purchase hardware based on this information, and would provide a local counterpart who take over the technical support after the installation of INVEC-2.
- Decentralized Drug Management Model Design (October 1995-March 1996) For the health *area* level, RPM designed a new decentralized drug management model system, which included definition of the system model requirements, guidelines for product selection, quantification, procurement and direct delivery by suppliers, inventory control, stores management, distribution, dispensing, and cost recovery operations. RPM's active donor coordination strategy with World Bank-FASBASE, WHO/PAHO, Belgium Foreign Aid, and UNICEF facilitated consensus on the components of the model design and its adoption by other projects.
- Development and Implementation of Training of Trainers (TOT) Methodology and Materials (April-June 1996) RPM developed a TOT manual, *Taller de Manejo Descentralizado de Medicamentos en Areas de Salud del Ecuador*, for use by the health *area* staff to implement the new decentralized drug management system. This manual was tested in a five-day workshop attended by 45 staff from 10 pilot *areas* (supported by FASBASE) in June 1996. These trainers would repeat the workshop in their corresponding health *areas* within the following three months. However, FASBASE failed to provide them with the funds to implement this training.
- Development of the Decentralized Drug Management System at the Hospital Level (September 1996-June 1998) USAID/Ecuador allocated additional field support funds (\$28,000) for RPM to assist the staff of the Hospital Eugenio Espejo (HEE) to improve the hospital drug management system. RPM planned and conducted a Drug Needs Planning Workshop. In this workshop, RPM used the Spanish version of *Manual for the Development and Maintenance of Hospital Formularies* and developed a *Participant's Manual for the Drug Needs Planning Workshop*.

- Consolidation and Expansion of the Drug Management System (November 1996-June 1998) RPM is identifying and developing opportunities for expanding the new decentralized drug management system to as many health *areas* as possible in the life of the country program Besides work with FASBASE in its pilot *areas*, work is also planned in three other provinces Imbabura, Morona Santiago, and Tungurahua RPM will work with CEPAR (a local NGO also supported by USAID) in selected districts of Imbabura and Morona Santiago RPM is also planning to include activities in support of the IMCI initiative in the Imbabura province, in coordination with the BASICS project
- Development and Training for the New Decentralized Drug Management Supervision and Monitoring System (June 1997-June 1998) RPM will assist central MOH and provincial authorities to develop the supervision and monitoring system of the decentralized system The RPM system performance indicators will be adapted to this use
- Development of a Rational Drug Use Approach (June 1997-June 1998) RPM will facilitate activities to address irrational drug use in hospitals, and will collaborate with other donors and organizations active in this field

Findings of two visits by RPM staff (MSH-USP) indicated that the Medical Information Center at the School of Basic Medical Sciences of the Central University of Ecuador met the conditions for developing a Drug Information Center (DIC) in 1995 The main condition for ensuring sustainability of RPM's work was the recruitment of at least one health professional to work full-time This candidate(s) would receive training for 3 weeks at the DIC in the University of Arizona and one week at the USP in August of that year Unfortunately, the position was not advertised and only three candidates were identified and considered by the University authorities

Close follow up of the recruitment process and communications with the Dean and the Director of the Medical Information Center determined that none of the candidates met the requirements one was a medical technician who lacked medical training, another was a pharmacist who could only work part-time and the last one was a pharmacist who did not accept the level of salary proposed by the University By August 1995, RPM staff decided to cancel the training scheduled and to postpone the activity due to the lack of suitable candidates RPM has revisited the issue but the same personnel impediments persisted and this DIC activity was finally canceled Instead, it was decided RPM would try to include other drug information activities, such as training in patient counseling skills in hospital settings, as appropriate

4 Collaboration

- Within the level of available funding, RPM's collaboration with the pharmaceutical management component of the FASBASE Project was based on joint short-term plans of action and the understanding that FASBASE would cover local implementation costs Despite the fact that the pharmaceutical component of FASBASE was understaffed (one pharmacist was hired in October 1995 and resigned in December, another was hired in March 1996, dismissed in September and rehired in December), this agreement has been implemented Staff from FASBASE's ten pilot health *areas* were involved in the design of the new decentralized drug management system and were trained as trainers to start the new system implementation

- UNICEF is implementing the Bamako Initiative in three health *areas* in Ecuador. Staff from these *areas* attended an RPM rapid drug management assessment workshop in December 1995, but due to UNICEF staff changes, it has not been possible to arrange for them to participate in the subsequent activities. However, RPM is making efforts to coordinate activities with the new project manager, and has distributed copies of its training materials.
- The training manuals developed by RPM are now being used in training activities in RPM's two provinces, in six *areas* sponsored by the Belgium Foreign Aid Agency and in six other *areas* supported by UNICEF (Project "Salud para Todos" - Bamako Initiative approach). WHO/PAHO adopted RPM's rapid assessment manual for its training activities.

5 Most Important Achievements

- RPM's report of problems identified in CEMEIM was successful in stimulating intent to change current policy. Lack of follow up to the MOH's policy statement was due to changes in personnel and in government.
- The decentralization approach developed by RPM was based on the findings of a rapid self-assessment (November 1995), which indicated the priority technical drug management issues to be targeted. Thus, RPM has implemented a process wherein MOH staff have taken the lead in reforming their own system. The assessment team included 24 pilot *area* staff, central and provincial MOH staff, FASBASE counterparts and technical staff of other donor-funded projects. Besides the technical knowledge and experience, the *area* staff also gained a sense of responsibility for the system's outcomes and for the design of the new drug management model. Every three months, RPM and FASBASE gathered *area* staff to plan and review progress. This maintained motivation by recognizing the progress made and sharing the experiences of the different *areas*.
- Leverage of other donor funds. FASBASE was responsible for local implementation costs (three training workshops, MOH staff's travel and per diem, document reproduction, purchase of drugs and hardware, etc.) FASBASE has not been able to quantify the amount of money provided in support of RPM activities.
- Dissemination of RPM's approach and harmonization with other donors. RPM involved MOH and FASBASE counterparts, along with technical staff of other projects in the editorial committee that revised two main documents: the *Decentralized Drug Management System for Health Areas* manual, and the *Decentralized Drug Management System for Health Facilities* pocket manual.
- Spanish version of the *Manual for Development and Maintenance of Hospital Drug Formularies*. RPM trained twenty-five hospital doctors, nurses, and pharmacists of the national referral hospital to develop a decentralized hospital drug management system, using the approach of this RPM manual. Hospital staff started working in committees, applying RPM's formulary development manual and it is expected they will train provincial hospital staff and expand the approach. Three months after the workshop, the hospital staff were able to produce the first draft of their own hospital drug formulary and implemented corrective measures in the drug selection and procurement process.

- Spanish Rapid Assessment TOT Manual RPM trained the provincial pharmacist and one health *area* coordinator for each of the four provinces assisted by FASBASE (eight staff) in a two-day workshop. The workshop participants were to reproduce RPM's training in the rapid drug management assessment methodology in other project *areas*. FASBASE did not follow-up this activity due to lack of funds and staff changes.
- Spanish version of INVEC-2 RPM adapted INVEC-2 to the requirements of the decentralized system and the type of operations to be conducted by health *areas*. Implementation was dependent on FASBASE recruiting a local counterpart and procuring the hardware. In August 1996, a field trial had to be interrupted because a temporary counterpart was appointed for only one week and hardware had not yet been purchased. In March 1997, FASBASE decided to set aside INVEC-2 and to adapt parts of INVEC-1 into their information development strategy.

6 Constraints Encountered and Program Adjustments

- Despite the expressed MOH commitment to restructure CEMEIM, and the changes achieved at policy level, implementation of these changes were not backed with corresponding actions by other government and political groups. This resulted in RPM and World Bank-FASBASE discontinuing this activity until the government expressed firm commitment.
- High technical staff turnover in Ecuador has been a problem. MOH counterparts have resigned twice. This occurred after the presidentially elections in August 1996 and after the government reshuffle in February 1997. The MOH position of Director of Pharmacotherapeutics has been vacant since December 1996. Consequently, drug policy issues are not well-defined and official plans are unknown. RPM has briefed the new authorities and discussed different options. Current plans include activities in response to requests by MOH staff to concentrate our assistance in one or two provinces in 1997.
- There was lack of continuity of the RPM activities that were carried out under the agreement that FASBASE would replicate them. All FASBASE staff hired prior to the elections were dismissed in August. Although some staff were reappointed in March, most of the activities that required FASBASE follow-up and/or funds have been postponed, and as in the case of INVEC-2, a new activity has been planned instead.
- Support in drug information and registration is still desirable and a marked need in Ecuador. However, this is a long-term activity that requires a high level of commitment by the counterpart organization. In spite of the expressed interest and follow-up of the Director of the Medical Information Center, the DIC activity did not get off the ground due to the lack of suitable candidates.

7 Likely Needs after End of Project (EOP)

- Assist in the expansion of the new decentralized drug management system to other health *areas*.
- Assist the MOH to develop its monitoring and supervision system of the drug management system.
- Assist the MOH to develop a rational drug use approach.

- Develop the drug use review methodology in hospitals and health *area* facilities
- Assist the hospitals and health *areas* to improve management of procurement of drugs and medical supplies
- Assist the MOH to develop a comprehensive system to ensure access to reproductive health commodities that meet the demand for these services
- Assist the MOH to continue the harmonization of approaches with other donors and projects

8 Key Documents and Products

Beracochea, Elvira, David Nelson, and Judith Seltzer *Taller de Manejo Descentralizado de Medicamentos en Areas de Salud del Ecuador* (TOT manual) Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, June 1996

Beracochea, Elvira, and Yolanda Silva de Grijalva *Taller de Planificación de Medicamentos en el Hospital Eugenio Espejo Manual del Participante* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, 1996

Lee, David, James Rankin, Jean-Pierre Sallet, et al *Sistema de Suministro de Medicamentos en el Ecuador Evaluacion y Propuesta de Reforma* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, 1994 (English executive summary is available)

Nelson, David, ed *Guía del Sistema Descentralizado de Manejo de Medicamentos en Areas de Salud* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, 1996

Nelson, David, ed *Informe de la Evaluación Rapida del Manejo de Productos Farmacéuticos en Areas de Salud del Ecuador* Quito, Ecuador Ministerio de Salud Pública, 1996

Palacio, Dr Alfredo *Ministerio de Salud Pública del Ecuador Política Nacional de Salud Periodo 1995-1996* Ecuador Ministerio de Salud Publica, 1995

Rational Pharmaceutical Management Project, et al *Guía del Sistema Descentralizado de Manejo de Medicamentos en Unidades Operativas* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, 1996

Rational Pharmaceutical Management Project, et al *Taller de Evaluación Rapida--Manual del Facilitador* Rational Pharmaceutical Management Project/Management Sciences for Health, 1996

Rational Pharmaceutical Management Project, et al *Manual para el Desarrollo y Mantenimiento de Formularios Terapeuticos para Hospitales* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, 1996

Sallet, Jean-Pierre, and A M Van Ommen *Ecuador Field Test of the Pharmaceutical Management Indicators Matrix* Arlington, VA USAID/LAC HNPS, Management Sciences for Health, 1992

Sarrazin, Dr Luis *Ministerio de Salud Pública Programa Nacional de Medicina Generica (PRONAMEG)*
Ecuador Ministerio de Salud Pública, 1995

Most Recent Update

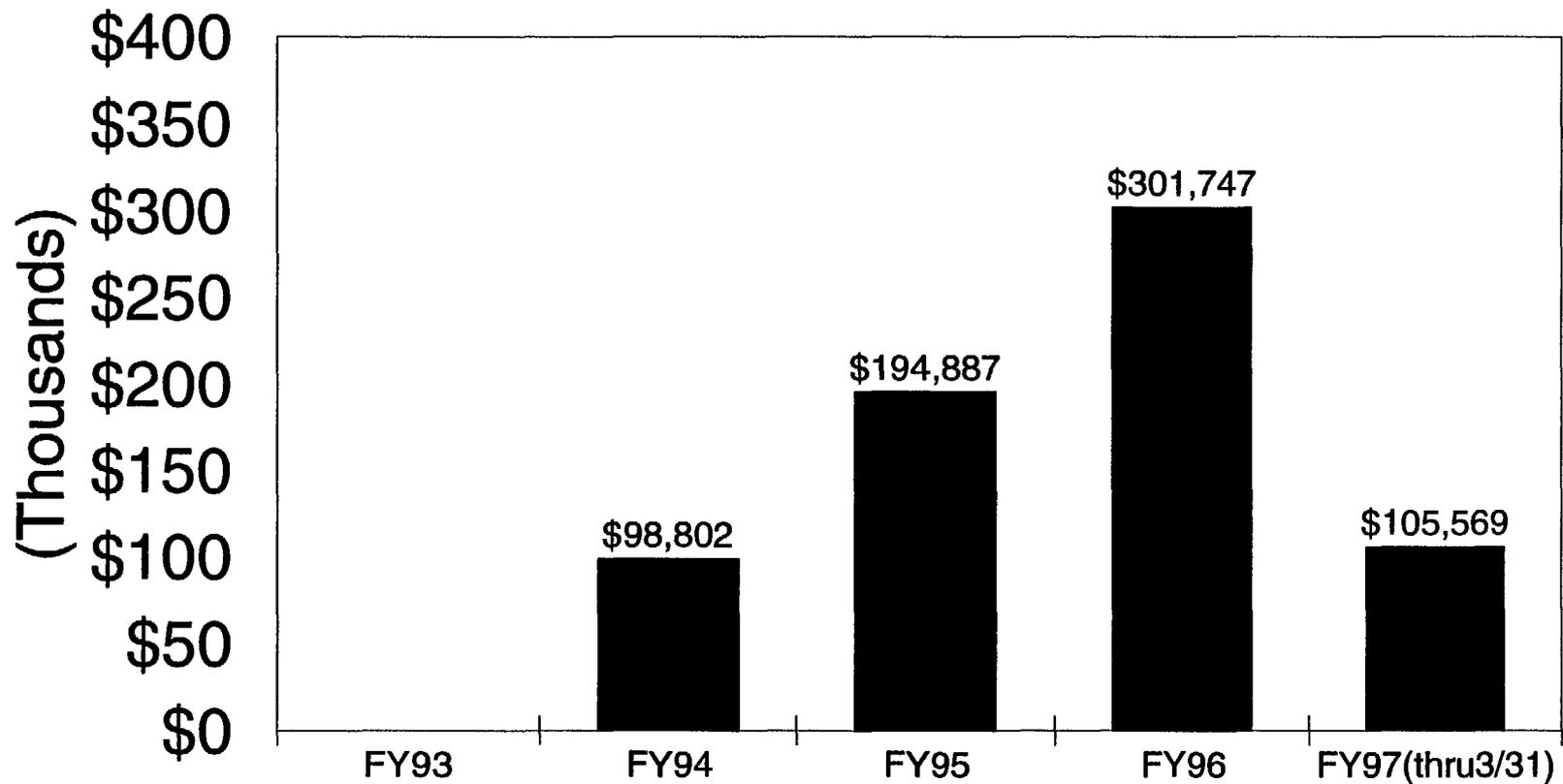
Nelson, David *Memo Status of RPM Activites in Ecuador* May 19, 1997

9 Inputs

Below is a graph depicting the RPM expenditures by year, for the program The graph also provides the total expenditures and/or allocations for the program Following that is a table illustrating the level of effort, in months, of RPM staff and consultant time The second table summarizes the inputs into the program by RPM and other projects and organizations

RPM Expenditures by Year

Ecuador



Total Expenditures \$701,004
Total Allocations \$498,000

RPM Level of Effort	
Ecuador	
Person Months thru 3/31/97	
MSH Staff*	38 5
Consultants*	10 1
Total	48 6

* Assumes 7 5 hrs/day and 22 days/month

Other Inputs		
Ecuador		
Thru 3/31/97		
<u>RPM</u>	<u>Description</u>	<u>Value</u>
Equipment	Overhead projector, USP DI	\$1,122
<u>Other USAID*</u>		
CEPAR	Support for strengthening of local capacity	
<u>Other Donors*</u>		
FASBASE	Local costs at 5 workshops	\$20,000
UNICEF	Ecuadorean Bamako Initiative	

* Non-RPM contributions are estimates

C Nepal

Program Manager James Bates

1 Strategic Importance

USAID Nepal has three Strategic Objectives, of which RPM supports *SO2, Reduction of fertility and improvement in maternal child health*

RPM contributes substantially to SO2. For this objective, the Mission has identified three Program Outcomes (POs), including *PO1, Increased use of family planning services, PO2, Increased quality of family planning services, and PO3, Increased use of selected maternal-child health services*. In addition, for SO2, there is a *Target of Opportunity Increased STD/HIV prevention and control practices by high risk groups in targeted areas*

RPM's greatest contribution is to PO3. USAID's Strategic Plan says on page 26 that "The principal causes of under-five morbidity and mortality in Nepal are diarrhoeal disease, acute respiratory infections, and vaccine preventable disease." All of these problems (and indeed, most others, including vitamin A deficiency) require availability and proper use of drugs (or vaccines) for successful outcomes.

RPM also contributes to the two family planning POs. This comes about most directly through RPM's participation in the "Logistics System Improvement Plan," which is an umbrella work plan for improving the Ministry of Health's logistics services for both health and family planning. USAID's strategic plan also indirectly supports the importance of drug management to population activities when it says on page 26 that "It is well documented internationally that parental concerns about child survival are a powerful factor influencing demand for family planning services."

2 Needs Assessment

Date of Assessment August 1993

Key Findings and Conclusions

Drug registration

- The drug registration and licensing system apparently contains data on 12,000 drug items, 51 domestic manufacturers, 956 authorized importers and about 8,000 wholesalers and retailers. The system is manual and has at best limited information retrieval capacity. Only with difficulty could staff develop a list of domestic manufacturers producing products on the Essential Drug List. The accuracy of this output was suspect.

Procurement and inventory management

- Little information is available to inform regional and central level procurement decision making, and informants report a tendency to simply repeat last year's orders.

- The general practice is to provide all health posts with exactly the same annual consignment of drugs, regardless of the sizes of individual posts or their work loads
- For most essential drugs, there is no mechanism by which health posts may resupply themselves, if they run out between annual shipments
- Stock control measures at storage and clinical sites are weak. There is virtually no recovery of information on consumption and balances
- Storage conditions and stock arrangement are usually poor, resulting in high probable losses from expiration and deterioration

Drug information and rational use

- Unbiased, current drug references are not available in most clinical facilities, nor is such information available to officials and committees who develop drug lists and make procurement decisions
- Recent studies showed that most clinical facility staff were unaware of the existence of the official *Essential Drug List* or *Standard Drug Treatment Schedule*
- Insufficient drug supplies at clinical facilities contribute to such inappropriate behaviors as prescribing and dispensing incomplete courses of treatment, and prescribing drugs by brand name from retail pharmacies
- Even at the most prestigious hospitals in Kathmandu, there are few or no controls over prescribing practices, nor are there efforts to promote rational prescribing from the EDL. This means that, in practice, the all-important medical opinion leadership in rational drug use is lacking
- And finally, human resource management issues within the Ministry of Health system, greatly constrain efforts to improve prescribing behavior. These include vacancies in care provider positions in many clinical facilities, frequent transfers, which can nullify the effects of training interventions, and absence of financial and human resources for monitoring and supervision, which makes it difficult to provide reinforcement for prescribing behavior change

3 Work Plan

Nepal Program Work Plan October - September 1995

Work Plan for Drug Information and Rational Use (a specialized plan prepared in October 1994 and subsequently integrated into other work plans)

Nepal Program Work Plan Update May 1995 - September 1995

Nepal Program Work Plan for Fiscal Year 1996

Nepal Five Year Vision for Improving Drug Management (a work plan-like document prepared in September 1996 at USAID's request for their health portfolio planning purposes)

Summary of Key Activities

RPM's work in Nepal has responded to all three of the project's mandated technical priorities

Automation of drug registration

- RPM facilitated an arrangement whereby WHO provides technical assistance and computer software for automating drug registration data. RPM was instrumental in putting in place the required computer hardware and locating funding for an intensive data entry program so that there could be a "fast as possible" transition from the old manual system to the new automated system. RPM continues to communicate with WHO concerning their TA inputs and the general progress of this activity.

Procurement and inventory management

- RPM has collaborated with the centrally-funded Family Planning Logistics Management Project (FPLM) and the bilateral Child Survival and Family Planning Services Project to design and implement the "Logistics System Improvement Plan." This is the umbrella document under which all USAID-funded work in logistics management takes place, including that for drugs and contraceptives.
- RPM helped to develop and test methods for cleaning out and reorganizing all district and facility level storage facilities.
- RPM helped with the overall design of the new logistics information system (LMIS) set to provide information on consumption and balances for priority products at all levels of the system. RPM took the lead in developing the product coding system.
- RPM worked with MOH's Logistics Management Division (LMD) to develop a drug supplier information system and to propose appropriate routines for managing competitive procurements of drugs and other supplies.
- RPM worked with LMD to develop an approach to tracking all drug and contraceptive inputs into the overall MOH services delivery system. Analysis of data for 1994 showed that all drug inputs, for which data could be obtained, were valued at about \$5,000,000, and 80% of this was provided by donors.
- RPM carried out a major study to evaluate existing drug cost recovery activities. The study showed that certain programs operated by NGOs were achieving better rates of drug availability than the MOH system and were also achieving significant rates of cost recovery. The study made recommendations concerning the design and implementation of the troubled Community Drug Program (CDP), a Bamako Initiative-style drug sales activity supported by KfW and the Nippon Foundation, with technical input from UNICEF.

Drug information and rational use

- RPM has worked with the Department of Drug Administration (DDA) to set up the Drug Information Network of Nepal (DINON). DINON now has four drug information centers, each equipped with up-to-date publications and computerized databases for providing unbiased information on drugs. The sites include DDA itself, responding to the MOH services delivery system and parties requiring regulatory information, the Tribhuvan University Teaching Hospital (TU), responding to medical opinion leaders and hospital-based physicians, the Resource Center for Primary Health Care, responding to NGOs and community-oriented programs, and the Nepal Chemists and Druggists Association, responding to retail drug sellers.
- Also working with DDA and DINON, RPM has developed a computerized Nepal-specific drug information database, patterned after the CD-ROM version of the well known publication USP DI.
- RPM has collaborated with the Resource Center for Primary Health Care (RECPHEC) to promote increased availability of drug-related information to the public. Most importantly, this has consisted of publication of a drug information bulletin in *Bhalakusari*, RECPHEC's community-oriented newsletter with circulation of 7,000. *Bhalakusari* is oriented to non-physician primary care providers and reaches most of Nepal's health posts. A related initiative is the compilation and circulation of a bibliography of Nepal-specific drug management related documents, including publications, studies and consultancy reports.
- RPM has collaborated with DDA and an expert committee to produce a revised *Standard Drug Treatment Schedule* for primary health care workers. The working group has produced a draft, which has been turned over to Tribhuvan University's Health Learning Materials Center for editing, design and field testing. This product will be published in both Nepali and English.
- Finally, RPM has collaborated with DDA and INRUD in Nepal in the development of a strategy for promoting rational drug use within the MOH services delivery system. This has been a slow and at times difficult process, that began with operations research on drug use practices carried out by INRUD in 1994-95. RPM has facilitated an arrangement with GTZ, whereby all parties will collaborate to develop and test a strategy based on training, monitoring, and supervision in two districts participating in GTZ's primary health care project.

4 Collaboration

RPM's Nepal country program has provided a number of opportunities for collaboration with other USAID projects, donor agencies and local non-governmental organizations. The most important examples include

- RPM has worked, and continues to work, actively with three other USAID projects in Nepal. The most important example is the collaboration with the bilaterally-funded Child Survival and Family Services Project (CSFSP) and the centrally funded Family Planning Logistics Management Project in the design and implementation of the "Logistics System Improvement Plan." RPM also collaborates with the AIDSCAP Project, through the medium of including, at their request, the Nepal Chemists and Druggists Association in the Drug Information Network of Nepal. In the initial stage of the project, CSFSP provided funding for certain RPM-related activities including procurement of computers, operations research on drug use practices, and data input for drug registration activities.

- RPM also collaborates with WHO. This takes three forms. First, through communication with WHO Geneva's Drug Policy Program, which has facilitated the installation and progressive implementation of drug registration software. Second, RPM stays in close touch with the WHO country program. The WR, Dr. William Pigot, and his staff, have, on several occasions, participated in gatherings where RPM activities were in focus, and they have been very supportive of our work. Third, RPM coordinates its plans in Nepal with WHO Geneva's Action Programme on Essential Drugs, and in fact DAP's director, Dr. Jonathan Quick, has remarked to the effect that, in rationalizing the use of their own scarce resources, DAP "is able to go light in Nepal, because RPM is so active there."
- RPM has collaborated with UNICEF in the design and implementation of the major study, *Nepal Cost-Sharing in Pharmaceutical Distribution*, completed in July 1996. UNICEF funded the cost of the sample survey that provided much of the data analyzed. RPM has hoped to collaborate with UNICEF in the design and implementation of the Community Drug Program, but for a variety of reasons this did not prove feasible.
- In the work attempting to improve drug procurement operations at LMD, RPM collaborated with KfW, which had concluded an agreement with the Government of Nepal to fund major procurements of drugs and medical supplies. This collaboration consisted primarily of information sharing on current procurements.
- RPM has negotiated an agreement with GTZ, to collaborate with that agency in the design and implementation of a strategy for promoting improved drug management at the district level. The GTZ Primary Health Care Project operates in two focal districts (Dhading and Sirah) for the purpose of developing a comprehensive approach to improving management at that level. RPM, GTZ, and of course DDA, will work together on drug-related activities. RPM will provide technical assistance and GTZ will provide both technical assistance and funding of local implementation costs.
- Finally, it should be noted that RPM has taken care to include local organizations apart from the Ministry of Health in the Nepal country program. RPM works with the Resource Center for Primary Health Care (RECPHEC), an NGO, whose focus is community action for improving health programs, the Tribhuvan University's Institute of Medicine Teaching Hospital (IOM), wherein is located one of the Drug Information Network of Nepal centers, TU's Health Learning Materials Center (HLMC), which is assisting with the development of a revised *Standard Drug Treatment Schedule*, and last, but not least, with the Nepal chapter of the International Network for Rational Use of Drugs (INRUD) which is assisting in all activities that concern rational drug use.

5 Most Important Achievements

Taking into account the long list of RPM's activities in Nepal, the most important achievements include

- Convincing USAID to include drug management under the umbrella of the "Logistics System Improvement Plan." Prior to completion of the RPM country assessment, USAID had intended to limit its focus to family planning supplies.

- Contributions to the Logistics Information System, including collaboration in designing the overall system architecture, collaboration in developing methods for “dejunking” and reorganizing storage sites, with a new stock arrangement method designed to facilitate reporting activities, development of the product coding system, and development of an approach to tracking drug and family planning commodity inputs into the MOH system
- Facilitating the automation of the drug registration and licensing system
- Collaborating in setting up the Drug Information Network of Nepal, with its four information centers and progressive development of the Nepal-specific drug information database This has been one of the most visible activities
- Collaborating in the drafting, design and testing of the revised *Standard Drug Treatment Schedule*
- Collaborating in operations research on drug use patterns and development of a strategy to improve drug management at the district level
- Carrying out the major study evaluating existing drug cost-sharing activities and making this work available to inform the design and implementation of the Community Drug Program

6 Constraints and Adjustments

There have been two significant disappointments in RPM's work in Nepal These developments have influenced the current balance of RPM's program, which is now heavily weighted toward drug information and use activities

- Work within the Logistics Management Division to strengthen capacity to manage drug procurements has not been successful Beginning in May 1994, RPM supported work to design and implement improved information management and procurement routines, but LMD leadership showed little interest It was difficult for RPM staff to engage and retain the attention of LMD counterparts, and in July 1995 this stream of activities was discontinued Essentially, LMD was not interested in assistance with implementation of competitive procurement practices
- RPM had hoped to play a major role in influencing the design and implementation of the Community Drug Program (CDP) The CDP was intended to be a major attempt to implement a national public service drug sales program Approximately \$10,000,000 worth of funding had been pledged by KfW and the Nippon Foundation to the Government of Nepal, with UNICEF designated to provide technical coordination Within MOH, LMD was identified as the leading counterpart

Design and implementation activities began under UNICEF's leadership in about July 1994 In April 1995, UNICEF contacted RPM, stated that the program had not gone as well as expected, and requested assistance in charting an improved course At a donors' meeting in Kathmandu in May 1995, RPM called attention to certain lack of quantitative information in existing design documents, and agreed to carry out a feasibility study on the best options for proceeding, based on quantitative evaluation of existing cost-sharing programs

Collaboration with UNICEF continued through development of a study protocol, development of questionnaires, and data collection. UNICEF provided a significant amount of funding for the data collection, which was carried out by Valley Research, a local NGO, with RPM taking the lead in data analysis and report writing. RPM staff completed and circulated the report in July 1996. The main thrust of RPM's findings was that the best way to move forward with drug cost-sharing was for the Ministry of Health to implement a program largely through local NGOs, some of which have good track records in this difficult area of endeavor.

The study was well received by USAID, WHO, and GTZ. KfW and Nippon Foundation have made little comment, and the same is true of UNICEF and MOH. It is RPM's impression that the recommendation to allot a major role to NGOs was not popular at MOH or with Nippon. It appears that KfW and Nippon have significantly reduced their funding commitments, but that the activity will still go ahead, on a reduced scale, with some degree of technical support from UNICEF. RPM has little confidence in the technical quality of the work now being carried out, and has no specific plans to be further involved, though the possibility is not completely ruled out.

- Given the difficulties encountered in the work on procurement at LMD, and the work on the Community Drug Program, there has been a significant adjustment in the RPM program. It has emerged *de facto* as one that focuses mainly on drug information and rational use activities. It is important to note that these are activities that fall within the domain of the Department of Drug Administration. DDA has been a reasonably receptive collaborator, and though work with DDA has not been problem free, it has been possible to make progress.

7 Needs After End of Project

- Despite difficulties in working with LMD, there is an ongoing need to improve the management of drug procurements, both through purchase and donation. The feasibility of making progress in this area will depend on political will and staff capacities within LMD.
- After a long period of preparation and development, RPM, GTZ and DDA are just beginning to launch activities aimed at improving drug management, including rational drug use, at the district level. The need to continue work in this area will be ongoing. Major constraints will be limited financial and human resources for monitoring and supervision, not to mention Nepal's difficult geography.
- Nepal's NGOs are a resource very underappreciated by the Ministry of Health. They make significant contributions to public service-oriented drug management in a number of areas including procurement, cost recovery and promotion of rational use. Important actors include the NGOs with which RPM collaborates, such as RECPHEC and INRUD, and others with whom RPM is not working directly, such as Britain-Nepal Medical Trust and the United Mission to Nepal. Likely, RPM's program will expand its work with NGOs and there will be a need for continued engagement after the end of the project.

8 Key Documents and Products

Bates, J A et al *Rational Pharmaceutical Management Project, Nepal Pharmaceutical Sector Assessment, Final Report* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, January 1994

Bates, J A et al *Logistic System Improvement Work Planning Exercise 29 January 1994 to 24 February 1994* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, 15 March 1994

Bates, J A , et al *Work Plan for Drug Information and Rational Use* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, August 1994

Cross, P N , et al *Nepal Cost-Sharing in Pharmaceutical Distribution* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, June 1996

Department of Drug Administration *Standard Drug Treatment Schedule* Kathmandu November 1996

Dias, V N *Nepal Ministry of Health Pharmaceutical Supply Directory* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, June 1995

International Network for Rational Use of Drugs, Nepal Country Core Group *Intervention Test of Training, Supervision and Dispensing Practices* Kathmandu 1995

Ministry of Health, *Logistics Information System Reporting Forms* Kathmandu, Nepal no date

Resource Center for Primary Health Care, *Bhalakusari, Drug Information Bulletin*, Seven editions so far, beginning September 1995 Kathmandu various dates

Resource Center for Primary Health Care *Bibliography on Drugs* Kathmandu August 1995

Most Recent Updates

Moore, Thomas *Nepal Trip Report 22 - 31 May 1997* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, May 1997

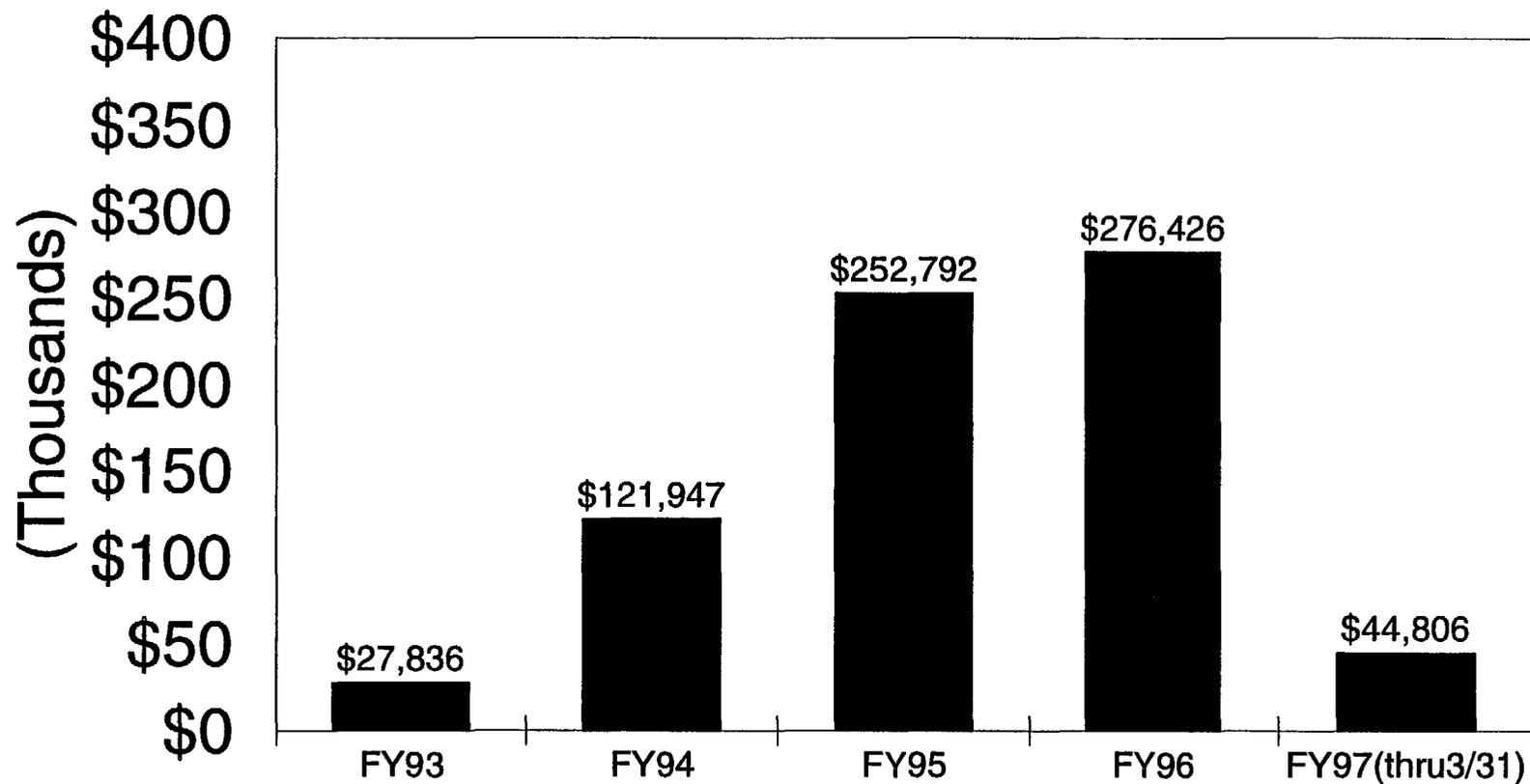
Santoso, Budiono *Report Consultancy Visit to Nepal 12 -28 February 1997* Kathmandu, Nepal Rational Pharmaceutical Management Project/Management Sciences for Health, March 1997

9 Inputs

Below is a graph depicting the RPM expenditures by year, for the program. The graph also provides the total expenditures and/or allocations for the program. Following that is a table illustrating the level of effort, in months, of RPM staff and consultant time. The second table summarizes the inputs into the program by RPM and other projects and organizations.

RPM Expenditures by Year

Nepal



Total Expenditures \$723,807
Total Allocations \$615,000

RPM Level of Effort	
Nepal	
Person Months thru 3/31/97	
MSH Staff*	32 8
Consultants*	5 8
Total	38 6

* Assumes 7 5 hrs/day and 22 days/month

Other Inputs		
Nepal		
Thru 3/31/97		
<u>RPM</u>	<u>Description</u>	<u>Value</u>
Subcontracts	RECPHEC Bhalakusari newsletter	\$9,708
	RECPHEC Bhalakusari newsletter	\$10,037
	HLMC Standard Drug Treatment Guidelines	\$6,087
	RECPHEC Bibliography	\$521
<u>Other USAID*</u>		
JSI	Operations research for INRUD	\$60,000
JSI	Computers and other equipment for DINON	\$20,000
JSI	Contract with DDA for input of drug registration data	\$6,000
FHI	Computers and other equipment for DINON	\$6,000
<u>Other Donors*</u>		
GTZ	Local costs for district-level management activity	\$37,000
UNICEF	Survey data collection costs for drug cost sharing study	\$20,000
WHO	Technical assistance and software for drug registration	

* Non RPM contributions are estimates

D Organization of Eastern Caribbean States

Program Manager Julie McFadyen

1 Strategic Importance

- RPM began work in the Organization of Eastern Caribbean States (OECS) to build on the success of the previous USAID-funded MSH project there, which established the Eastern Caribbean Drug Service (ECDS). Close contact with ECDS and other officials throughout the region have been maintained since that time, and the RPM project sought to utilize those relationships to expand and enhance ECDS capacities in the RPM priority technical areas
- The USAID Mission in Barbados was planning to end its supply of contraceptives to the region in July 1994, and RPM identified an opportunity to assist the OECS in its transition to another source of supply and management for contraceptives. RPM assisted in the needs quantification of contraceptives, and ensured this information was communicated to ECDS and incorporated in the next tender cycle
- In addition, RPM saw the potential for collaboration with the large Pan American Health Organization (PAHO) Health Management Information System (HMIS) for Community Health Services of Barbados and the Eastern Caribbean Countries Project

2 Needs Assessment

Date of Assessment September 1993

Key Findings and Conclusions

- There is no drug registration system in the region, and many countries have outdated drug laws. There is, however, an intention on the part of the ECDS policy board to harmonize legislation and improve registration
- There is a need to improve forecasting and quantification of drug needs skills in most islands. Medical store staff need more training in these areas in order to provide more accurate and timely information to ECDS for the regional tenders
- The region needs better access to current drug information, and needs to develop standard treatment guidelines. Because the region has a functional procurement and distribution system, the importance of ensuring rational drug use becomes more significant
- Beginning in July 1994, USAID will no longer provide contraceptive supplies to countries within the region. This will mean that Ministries of Health (MOH) in each country will be responsible for estimating, ordering, storing, and distributing contraceptives. The responsibility for estimating quantities and budget required will be transferred from the MOH to the Central Medical Stores (CMS) in each island

3 Work Plan

Date(s) October 1994 - September 1995
 April 1995 - September 1995
 October 1995 - September 1996
 October 1995 - September 1996 (amendment)

Summary of Key Activities

- RPM planned to install INVEC-2 in four islands St Vincent and the Grenadines, Grenada, Dominica, and St Lucia. The intention was to upgrade the original INVEC program in the first three islands, and install a relational database inventory management software program in St Lucia for the first time. RPM also planned to provide follow up support and training to these INVEC-2 installations to help ensure the smooth and continued functioning of the program.
- RPM wanted to provide more advanced training in R&R Report Writer software for CMS staff using INVEC-2, so that they can take better advantage of the program's reporting and management capabilities.
- RPM planned to upgrade the ECPRO procurement software used by ECDS for its annual tender. The monitoring system of orders and payment, and the reporting systems to compare estimates with consumption and to compare costs over time were to be improved. A link between ECPRO and the OECS financial and accounting system was also to be established. The new software would be called ECPRO-2.
- RPM originally planned to assist the ECDS with its work in drug registration.
- RPM originally planned to upgrade the drug information systems and work to improve rational drug use in the region.

4 Collaboration

- RPM has collaborated with the PAHO HMIS project in several activities. RPM trained four PAHO staff members in INVEC-2, the RPM inventory control and management software. PAHO staff learned both how to use the program, and how to install and support it. Two PAHO staff members participated in INVEC-2 installations in St. Vincent and the Grenadines and in Grenada. The PAHO project is also responsible for supporting the computer systems in those two islands.
- In addition, RPM and PAHO jointly sponsored an R&R Report Writer software training course for participants throughout the region. Twenty CMS and MOH staff (one of each from each island) were trained, along with two staff members of the Eastern Caribbean Drug Service. This software is used to produce the reports in both INVEC-2 and in the software that the HMIS project is developing. RPM paid for one copy of the software for each island, sponsored the two ECDS staff members, and sent a trainer to provide specific information on INVEC-2. PAHO produced a manual for the course, provided the venue, sponsored all other participants, and did most of the training.

- RPM collaborates with the ECDS in installing and supporting the INVEC-2 installations in the region. The ECDS procurement officer participated in the INVEC-2 installations in St. Vincent and the Grenadines and Grenada to learn the software and how to install it. He then provided most of the training for the INVEC-2 installation in St. Lucia, with RPM staff there to assist and set up databases for the program. The ECDS procurement officer installed the program in Antigua entirely on his own, after receiving a request for it from that island.
- RPM has capacitated ECDS as an effective provider of software support, so that most of the INVEC-2 installations in the OECS region call ECDS first if they are having a problem with the software, and ECDS assists them if they can. If they can't, they refer the INVEC-2 user to RPM for further support and assistance.

5 Most Important Achievements

- INVEC-2 inventory control and management software is installed and functioning well in St. Vincent and the Grenadines, St. Lucia, Grenada, and Dominica. This enables the CMS of each island to better track its inventory and improves forecasting of drug needs. The number of different stock items in each country's inventory ranges from 400 to 2,000.
- Twenty-two CMS, MOH, and ECDS staff members were given advanced training in R&R Report Writer software to allow them to design and customize their own reports from INVEC-2.
- ECPRO-2 was developed and installed at the ECDS offices in St. Lucia, where it has been successfully used to manage one entire tender cycle, thus far. The value of items on the ECDS tenders is approximately US\$2.3 million. Using this software, ECDS is able to manage the annual tender process with one full-time staff member, and assistance from two others.

6 Constraints Encountered and Program Adjustments

- The OECS region was originally considered a strong contender for long-term RPM assistance, because of the opportunities it presented, and MSH's history in the region. Due, however, to the closing of the USAID Mission in Barbados and USAID's shift to field-support funding, the RPM activities in the region were severely curtailed. In consultation with USAID staff, RPM decided to place the program in a "maintenance only" status after the four INVEC-2 installations were completed. Since early 1995, RPM work in the OECS has been limited to providing support and follow up to the INVEC-2 installation sites.

7 Likely Needs After End of Project (EOP)

- The INVEC-2 installations in the OECS will continue to need remote support, and will continue to need to receive upgrades to the program.
- ECDS staff may need assistance in writing additional reports for ECPRO-2, as they find more ways to use the information in the program. Because the program is still new, it may be necessary to make adaptations and refinements to it.

8 Key Documents and Products

Sallet, J P , R Laing, and D Housley *Organization of Eastern Caribbean States, Rational Pharmaceutical Management Project, Pharmaceutical Sector Assistance Final Report* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, January 1994

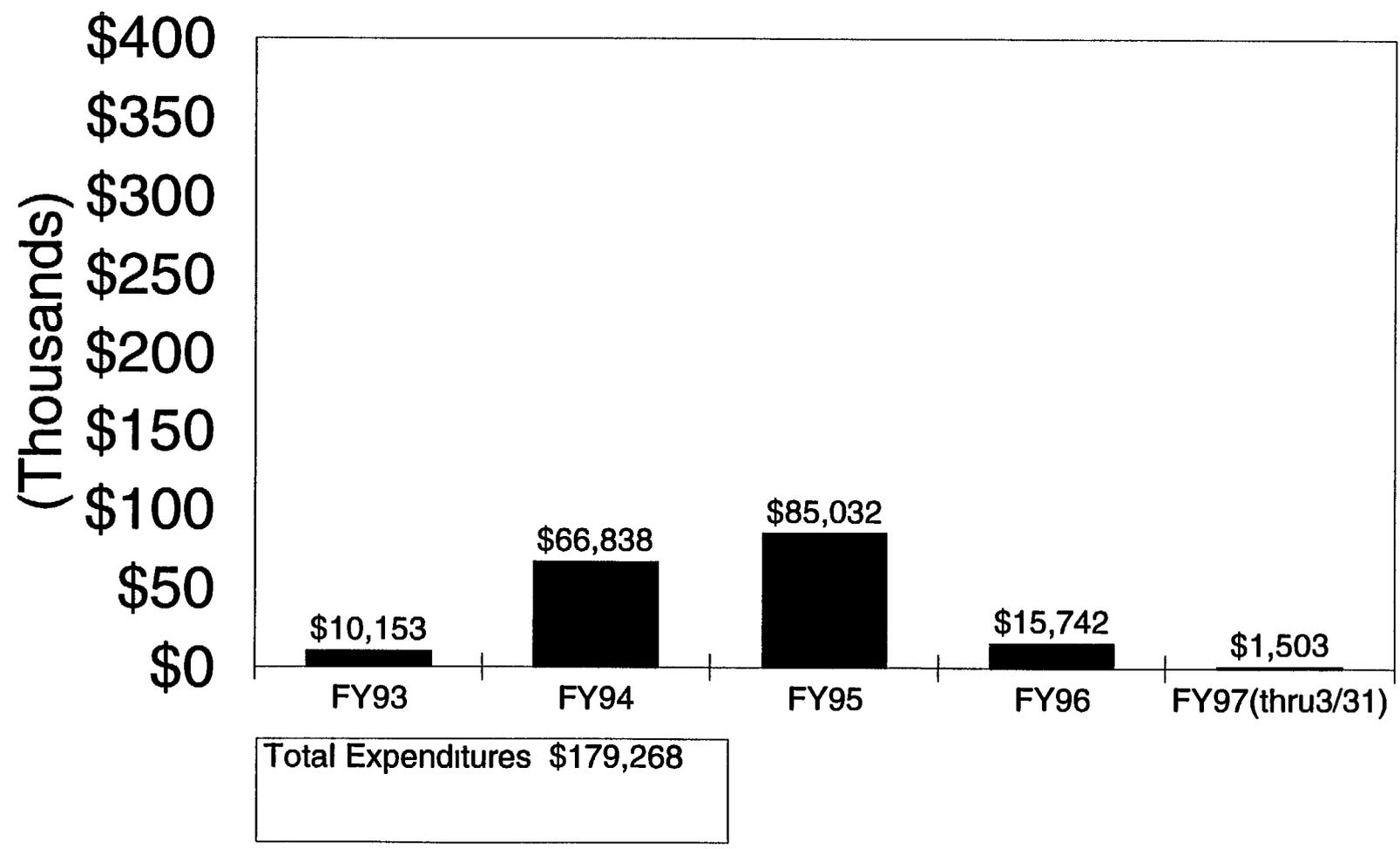
9 Inputs

Below is a graph depicting the RPM expenditures by year, for the program The graph also provides the total expenditures and/or allocations for the program Following that is a table illustrating the level of effort, in months, of RPM staff and consultant time The second table summarizes the inputs into the program by RPM and other projects and organizations

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RPM Expenditures by Year

Eastern Caribbean



**RPM Level of Effort
Eastern Caribbean
Person Months thru 3/31/97**

MSH Staff*	87
Consultants*	15
Total	102

* Assumes 7.5 hrs/day and 22 days/month

**Other Inputs
Eastern Caribbean
Thru 3/31/97**

<u>RPM</u>	<u>Description</u>	<u>Value</u>
Equipment	2 computers, peripherals, software	\$6,814
<u>Other Donors*</u>		
PAHO	R&R Report Writer Workshop	

* Non-RPM contributions are estimates

E Mozambique

Program Manager Tom Moore

1 Strategic Importance

RPM activities in Mozambique have focused on strengthening the drug distribution and inventory management components of the drug supply system. Effective drug management directly affects all levels of care by ensuring the availability and use of essential medications. To-date, activities included training of MOH staff at the national and regional levels in the logistics management and rational use of drug supplies. A second phase of training at the provincial level begins in 1997. In addition, RPM is planning to expand the scope of the program to include such activities as assisting in implementation of the newly put forth National Drug Policy, quantification of national drug requirements, financial analysis of drug management systems with a view to identifying opportunities for cost reduction, and automation of inventory control systems at selected storage facilities.

RPM activities in Mozambique support USAID Strategic Objective 3 - *Increase the Use of Essential MCH/FP Services* - directly and in collaboration with the Primary Health Care Project (URC) and the Essential Drugs Project (UNICEF), two important USAID-funded projects. Specifically, RPM activities aim to contribute to the following SO indicators:

SO3 1 *Increased Supply or Quality of MCH/FP Services* MOH staff receive standardized training in important issues of drug supply management (including warehouse management, distribution and information systems, and inventory control) to minimize loss of supplies due to improper stock handling (reception, storage, and distribution). Recent decentralization mandates will require more intense training in systematic cost reduction and cost recovery systems to ensure adequate supply of drugs.

SO3 1 2 *More Health Facilities Equipped to Provide Essential Services* MOH staff who have received RPM training are better equipped to manage their inventories and reduce the number of stockouts in their facilities.

SO3 1 3 *More Health Facilities with Trained Staff* On one level, RPM materials are used to support and reinforce the standard operating procedures MOH staff are expected to follow. On another level, staff responsible for training/continuous education programs within MOH are capacitated to reproduce the training at different levels independently of RPM.

2 Needs Assessment

Date January 1994

Key Findings and Conclusions

Public sector budget and finance

- In 1992, Mozambique spent 6% of its total budget on health and 2% of its health expenditures on pharmaceuticals. When the value of donations are included, approximately 25% of health expenditures were for pharmaceuticals. This amounted to US\$0.62 per capita on pharmaceuticals, compared to the internationally recommended expenditures range of US\$1.00 to \$3.00.

- The cost recovery system resulted in revenues equal to approximately 4% of the acquisition cost of drugs

Public sector procurement

- Drug procurements with Government of Mozambique funds are carried out centrally by MEDIMOC, a parastatal procurement agency. An estimated 91% of purchases are made through a competitive procurement process
- When comparing procurement prices with the average international price indicator, Mozambique was more effective than comparison countries, averaging 76% of the average international indicator price

Public sector logistics

- The availability of tracer drugs was very low at all levels. 66.7% were available at MEDIMOC Maputo, 79.7% were available at surveyed provincial medical stores, and 58.6% at health facilities
- Significant inventory record keeping problems exist at MEDIMOC. The average recorded figure on control cards in storage facilities was 128.8% higher than the actual count. Cards kept at the administrative offices indicated recorded inventory 159.3% of the actual. Monitoring and supervision of drug ordering, storage and distribution by warehouses and health facilities at the provincial and district levels is lacking
- The lead times from MEDIMOC to the provincial level are very long, due in part to a weak system of internal transportation, including management of MEDIMOC trucks, sea shipments and provincial health authority vehicles
- Skills for estimating drug needs at the warehouses and health facility levels is lacking. Of the 15 health facilities surveyed in the 1994 assessment, 11 did not use a formula for calculating quantities of drugs to order. Two of three of the provincial medical stores did not use a formula
- The kit system in Mozambique has been the main mechanism for the distribution of essential medications at the primary health care level. However, information is not readily available on the distribution of kits and on stock levels at these facilities. Without a system of local level monitoring, the Essential Drug Programme kits system cannot respond quickly to problems, and data generated in the EDP reporting system has not been fully utilized for planning purposes

Policy, legislation, and regulation

- In 1994, Mozambique had no formal National Drug Policy, although laws did exist concerning the National Formulary, the prescribing and dispensing of drugs, and the importation and export of drugs
- There is no formal drug registration system in place, although the government of Mozambique was working with WHO to implement a computerized registration system for pharmaceuticals at the time the assessment was conducted

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Formulary/Essential drugs list and drug information

- The National Formulary applies to both the public and private sectors. There were 323 drugs on the Mozambique National Formulary in 1994 and copies of the National Formulary were available in all of the health facilities surveyed for the assessment. At the time of the assessment, the National Formulary, which had not been reviewed nor approved since 1984, was in the final stages of revision and was expected to be approved in 1996.

Drug utilization

- There is a very high (98.1%) compliance with generic prescribing requirements in Mozambique, compared with other countries, and the gross indicators of drug use are relatively positive when compared to INRUD averages.

Product quality assurance

- Mozambique does not have a system for reporting product quality complaints and does not participate in the WHO Certification Scheme for quality assurance. This is perceived by the MOH as a significant weakness as the private sector re-emerges and the number of products available on the market increases.

Private sector pharmaceutical activity

- Access to private sector pharmacies is very low, with 285,156 persons per licensed private sector drug outlet (20 private and 40 FARMAC pharmacies for 16 million people). Although the pharmacy inspection system has not been fully developed, due to a lack of trained inspectors, this was not so much a problem given the relatively few facilities to be inspected. If the private sector were to expand, inspection needs will also increase.

3 Work Plan

Dates March 1995 - May 1996
 June 1995 - May 1996 (revision)
 January - December 1997

Summary of Key Activities

Poor management skills of health professionals at the central and provincial levels was identified as an important rate limiting factor to improving the drug supply system. In April 1995, the RPM/MOH team agreed that priority be given to increasing the management skills of prescribers, pharmacists and pharmacy technicians in the areas of procurement, inventory management, and rational drug use. Based on this, the following activities were planned and executed:

- Using the Managing Drug Supply training series developed by the MSH Drug Management Program as a basis, MOH staff translated 16 sessions and trainer's guides into Portuguese. RPM staff subsequently updated and revised this material, which is now available as "*Gestão e Use Racional de Medicamentos*."

- RPM conducted a two-week national level workshop in Maputo (June 1995) Participants included 28 physicians, pharmacists, pharmacy and medical technicians, and pharmacy agents, with all provinces being represented Subsequent two-week workshops were in three regions 22 participants completed the workshop in Manica (central region) in November 1995, 23 in Chokas Mar (northern region) in April 1996, and 31 in Namaacha (southern region) in October 1996 Between June 1995 and October 1996, a total of 104 participants received training
- Eleven MOH personnel who attended the national level workshop completed a training of trainers (TOT) workshop held during the week following this course The Mozambican trainers formed the Nucleus for Rational Drug Use in the Pharmaceutical Department and have been heavily involved in organizing and conducting the regional workshops It is important to note that by the third and last regional workshop, the Nucleus had gained sufficient experience to independently conduct future workshops with the course materials

Activities planned but not yet carried out include

- The above mentioned workshops laid the foundation for a series of abbreviated provincial level courses to take place in 1997 Specific management issues directly related to changes in procedures with decentralization will be the focus for nonclinical personnel and will include in-service activities if possible RPM will offer a course on "Drug Use Review" to clinical personnel with the aim of institutionalizing systematic prescription review in the provinces These course materials were recently translated into Portuguese
- RPM identified the need to conduct a quantification exercise to determine drug requirements as a priority in the original assessment Such an activity would help the MOH to optimize the use of limited resources as well as increase its credibility among donors This exercise would identify the most important drug products and quantities required, and the funds required to cover the treatment of the most prevalent and critical diseases This activity would include capacitating local MOH staff on data collection and analysis for quantification of drug needs

4 Collaboration

The "Drug Supply Management" and "Rational Drug Use" courses were organized by the Ministry of Health and received technical and financial support from UNICEF, the Swiss Cooperation, and the Primary Health Care Project/URC The participation of each agency is presented below

- The Pharmacy Department of the Ministry of Health provided administrative and logistical support in identifying participants and trainers, the venues, providing local transportation, and so forth
- The UNICEF Essential Drugs Program has paid for all local costs for each workshop (with the exception of participants funded by the PHC/URC project), including logistical support, per diems, and lodging and travel expenses, at a value of approximately \$50,000

- The Swiss Cooperation has contributed to RPM training efforts by supporting the initial translation of the training materials into Portuguese and later by providing the fees (to cover per diem expenses) for the local trainers who were employees of the Ministry of Health and therefore not eligible to receive fees from RPM/MSH
- The USAID-funded PHC/URC project has been supportive of RPM training activities, providing logistical support and sending 30 participants from the project provinces to be trained at the workshops. The estimated value of this support is \$22,140

5 Most Important Achievements

- As a result of RPM activities, over 100 MOH personnel from all the provinces have received basic training in management of drug supplies and rational drug use. Significantly, a core group of 11 people from all regions of the country has received training and experience in conducting this type of training and should be able to replicate it at the provincial and district levels. The exact numbers are
 - ▶ 120 persons trained include
 - 37 physicians
 - 6 pharmacists
 - 17 medical technicians
 - 49 pharmacy technicians
 - 11 pharmacy agents
 - ▶ 11 MOH trainers trained
 - ▶ Days of training provided
 - 50 days of workshops
 - 5 days of TOT
 - ▶ 150 participant's and 45 trainer's manuals have been produced and distributed to those attending the courses as well as to sponsoring agencies
- Excellent working relationships with the MOH and support from donor agencies has contributed significantly to positive results of RPM activities

6 Constraints Encountered and Program Adjustments

The successful completion of activities in Mozambique is due in no small part to the support and enthusiasm of the MOH, the USAID Mission, EDP/UNICEF, the PHC/URC project, and various donor agencies. Due to a high degree of cooperation there have been minimal constraints to carrying out the training activities as planned. However, as RPM plans to move beyond training to other activities such as the quantification exercise, which has already been postponed due to MOH scheduling problems, program adjustments may be required.

- The decentralization of many management functions to the provinces implies that there should be a system(s) in place at both central and peripheral levels capable of providing the needed information to support all management activities. RPM and the Pharmaceutical Department agreed to collaborate in assessing the types of information needed and to make recommendations on the type of system(s) that should be implemented (manual and computerized). This activity was scheduled to take place in early December 1996, but was canceled due to scheduling conflicts. It remains to be rescheduled.
- The estimation of requirements remains a weak point of the Mozambican drug supply system. It is essential to strengthen this aspect of drug management in order for the MOH to optimize the use of the limited resources available and to increase their credibility among donors. This exercise should assist the MOH to identify priority products, appropriate quantities, and the amount of funds needed to cover the treatment of the most prevalent and critical diseases. For this purpose, a national quantification exercise using consumption and morbidity data has been proposed by RPM. However, again, this activity was postponed by MOH, but should be completed by the end of 1997.
- The Pharmacy Department and the public sector supply system need to establish more credibility among the donors so that the MOH does not lose a significant amount of funds and support. Pooling resources at the central level in various areas has been discussed as one mechanism. RPM/MSH, EDP/UNICEF, and the PHC/URC project have agreed to create a document that specifies activities that will support the Mozambican EDP.
- The National Drug Policy is expected to be finalized and adopted by March 1998. This will be a significant development, as it defines the new structure of the MOH (including the dissolution of the Pharmaceutical Department and the creation of a new entity) and the responsibilities of the various programs and departments. Until these are determined and ensured, many activities have been postponed. Similarly, implementation of a new drug registration system is pending the publication of a new drug registration policy.
- Although the MOH has been working on the development of a formulary for some years, it is still not complete. The material to be included in the manual is to be based on monographs developed in the Mozambican drug information database and a pre-requisite for this activity is the completion of the database. The drug information component has been funded and implemented primarily through the USAID cooperative agreement with USP. A Portuguese translation of the USP DI on CD-ROM has been completed and was recently implemented.

7 Likely Need After End of Project (EOP)

Despite some delays, it has been possible to successfully implement most of RPM's technical program in Mozambique. Quite a lot of additional work, however, remains to be done. Some of this might take place under an RPM Project extension, now under consideration. A list of likely needs includes:

- Carry out operations research and provide training in such areas as drug financing (especially cost recovery), logistics, management, and inspection.
- Develop and implement a Pharmaceutical Management Information System (manual and automated), for procurement, including needs estimation.

- Conduct an assessment of the pharmaceutical private sector
- Explore viable mechanisms to promote essential drugs through the private sector
- Explore alternatives for procurement and cost recovery within the constraints of the Mozambican legal framework and, if feasible, assist in implementing revised procedures under decentralization

8 Key Documents and Products

Moore, T and A Savelli *Guia Para A Implementação de Programas De Avaliação Do Uso De Medicamentos Em Estabelecimentos De Saúde* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, February 1997

Savelli, A , H Haak *Ministry of Health of Mozambique, Rational Pharmaceutical Management Project, Mozambique Pharmaceutical Sector Assessment Final Report* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, January 1994 (in Portuguese and English)

Rational Pharmaceutical Management Project *Gestão e Uso Racional de Medicamentos, Manual do Formador* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, January 1997

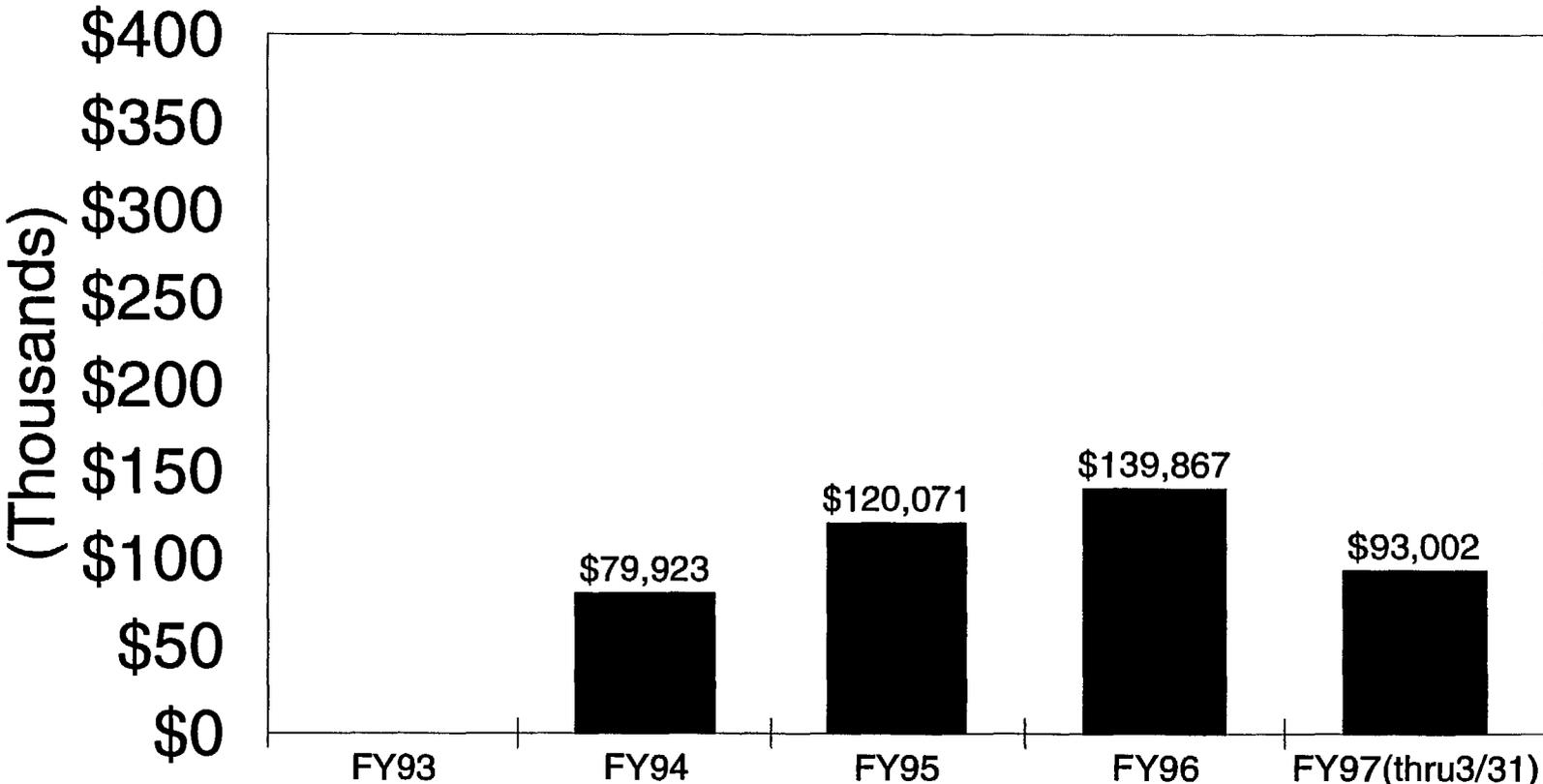
Rational Pharmaceutical Management Project *Gestão e Uso Racional de Medicamentos, Manual do Participante* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, January 1997

9 Inputs

Below is a graph depicting the RPM expenditures by year, for the program. The graph also provides the total expenditures and/or allocations for the program. Following that is a table illustrating the level of effort, in months, of RPM staff and consultant time. The second table summarizes the inputs into the program by RPM and other projects and organizations.

RPM Expenditures by Year

Mozambique



Total Expenditures \$432,863
Total Allocations \$654,579

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RPM Level of Effort Mozambique Person Months thru 3/31/97	
MSH Staff*	187
Consultants*	37
Total	224

* Assumes 7.5 hrs/day and 22 days/month

Other Inputs Mozambique Thru 3/31/97		
<u>RPM</u>	<u>Description</u>	<u>Value</u>
Subcontracts	Austral local data collection and analysis	\$18,841
<u>Other USAID*</u>		
URC	Participant funding for training courses	\$22,140
<u>Other Donors*</u>		
UNICEF	Support for logistics and participant training	\$50,000
Swiss Corp	Translation and funding for local trainers	

* Non-RPM contributions are estimates

F Zambia

Program Manager Michael Gabra

1 Strategic Importance

USAID has three strategic objectives in health and population, including *SO3 Increased use of Modern Contraceptives, SO4 Improved HIV/AIDS/STD Control Practices by High Risk Individuals* and *SO5 Improved Child Survival*. In-country, USAID relies on three bilateral projects as the primary team for achieving the objectives. These projects are the Zambia Child Health Project, the Zambia Family Planning Services Project, and the Zambia HIV/AIDS Project.

USAID supplements the work of these three locally based projects with inputs from a number of additional centrally funded projects, including RPM. RPM's role is to assist the USAID Mission, the bilateral projects, and most importantly, the Ministry of Health with specialized technical assistance in drug management, aimed at helping to achieve the strategic objectives.

It is most important to understand that the Zambian Ministry of Health is in the midst of an ambitious reform and restructuring effort. Key partners in this undertaking are Danida and SIDA. Other donors, including DGIS, ODA, and Irish Aid, also participate. USAID is also involved in the reform efforts, but it is fair to say that the agency's center of gravity is more in health worker training activities, so as to promote both continuity and improvement in quality of service, while restructuring takes place.

Taking all this into account, the strategic importance of RPM's work in Zambia may be summarized as the opportunity to

Assist USAID's health worker training activities to achieve the SO, through specialized input in drug management, with a specific focus on ways to promote improved drug management at the district level, within the context of overall restructuring efforts.

In going forward with this work, RPM has made special efforts to collaborate in specific ways with other projects, including the Zambia Child Health Project and Family Planning Services Project, the Family Planning Logistics Management Project and the MedLabs Project, which is sponsored by Irish Aid.

2 Needs Assessment

As part of the reform process, the MOH has been pursuing, with assistance from SIDA, the *National Drug Policy Development Programme*. Within the context of this activity, in 1995 and 1996, MOH staff, with support from the Karolinska Institute in Stockholm, Sweden, prepared eight background papers, including *Procurement, Distribution and Financing of Essential Drugs and Medical Supplies, Local Drug Production, Legislation and Regulation, Quality Assurance, Human Resources Development, Rational Drug Use, Selection, Research and Development, and Traditional Medicine and International Collaboration*.

In addition, as part of the same exercise, and with support from the WHO Action Programme on Essential Drugs, MOH staff have carried out an indicator-based study of drug management in Zambia, the result of which will be integrated into DAP's multi-country *Comparative Analysis of Drug Policy*.

Other important recent developments includes two studies for purposes of identifying options for restructuring the central medical store. One is entitled *External Consultancy on the Role of Medical Stores Ltd* and the other *Preliminary Report on the Establishment of the Essential Drugs and Medical Supplies Store*. RPM participated on the team that prepared the second document, and was responsible for drafting an annex that summarized drug management problems at the district and facility levels.

Amidst this abundance of documentation, it was scarcely necessary for RPM to conduct its own separate country assessment. Rather RPM has made use of the results of existing work. From the extensive list of specific findings available, the following generalizations are most relevant for RPM's purposes:

- Medical Stores Limited (MSL), the central drug procurement and distribution agency, is close to bankruptcy and requires restructuring and recapitalization in order to survive in a useful role. Management systems for procurement, financial control and inventory control do not produce the information required for running an effective operation. Distribution by MSL's fleet of trucks is erratic. Management staff are often poorly prepared for their responsibilities.
- The health reforms contemplate abolition of vertical programs such as family planning, MCH, malaria, EPI, and others, and folding them into an integrated services delivery system. It appears to be assumed that the management of the supplies required for all these programs will also be integrated, but there is no plan for bringing this about.
- The District Health Boards, which, under the reforms, will become responsible for all aspects of drug management at local levels, are not well equipped for these responsibilities. Specifically, board and clinical facility staff, few of whom have training in pharmacy, are not well prepared for such tasks as quantifying needs, maintaining inventory control systems, prescribing rationally or operating dispensaries. Supervisory mechanisms for ensuring the quality of work are lacking.
- Although the health reforms envision a unified logistics system for all products through all levels of the MOH system, at present management of different key product categories is not well coordinated. The effect is that it is difficult to ensure simultaneous availability at local levels of drugs, family planning supplies, laboratory supplies, and EPI supplies.

3 Work Plan

Zambia Child Health Project, RPM Consultancy Report August 1996

Work Plan Update for Zambia November 1996

Concept Paper, Strengthening Public Health Logistics in Zambia December 1996

Formulation of a current work plan is in process.

Background

One of the most positive aspects of the situation in Zambia is the fact that the Ministry of Health is serious about reform and restructuring. An unintended consequence is extreme fluidity in the working environment, such that work plans proposed one month are easily overtaken by events, so that they become obsolete the next month.

RPM began attempting to define a work plan in June 1996. At that time, RPM participated in meetings and workshops associated with formulation of the new National Drug Policy. Based on needs expressed in those meetings by MOH counterparts, in August RPM produced a work plan that emphasized development and implementation of MIS at the central level, in particular, at Medical Stores Limited (MSL), which manages the Zambia Child Health Project, subsequently provided feedback that the plan did not pay sufficient attention to strengthening drug management at the district level. MSL felt that this focus was necessary to complement their health worker training activities.

In response, RPM developed a second plan in November, which was open ended and essentially said that RPM would work to develop an approach to work at the district level, though it did not yet specify details.

Subsequently, in December 1996, RPM participated as a member of an international team that was evaluating options for restructuring Medical Stores Limited. RPM's role was to evaluate the capacity of the newly formed District Health Boards to relate effectively to an improved MSL, as well as manage stock once it reached the district and facility levels.

This work on the MSL evaluation team provided the opportunity to define an appropriate district-focused activity. This is described in a concept paper prepared in December. The activity that emerges in this paper has two important characteristics:

- It proposes a focus not just on drugs, but rather on "public health logistics," including drugs, family planning supplies and laboratory supplies, and
- It proposes a stream of activities for which technical assistance would be supplied not just by RPM, but rather by a team made up of RPM (responsible for drugs), FPLM (family planning supplies), and Irish Aid (lab supplies).

This plan was effectively launched in January 1997 by staff from each of the three TA providers, working in collaboration with the Ministry of Health's Department of Pharmaceutical Services and the Central Board of Health. The first activity has been to develop and test an indicator-based approach to assessing public health logistics operations at the district level. From this, other activities flow, including development of a package of "solutions" for the most commonly encountered problems. This work is now taking place in Lusaka Urban District, and in Petauke, a rural district. In addition, MSL has requested that RPM assist with upgrading their inventory control system through installation of INVEC-2.

Taking all of these developments into account, the RPM/FPLM/Irish Aid Team is now producing a work plan which will hopefully remain stable.

Summary of Key Activities

- RPM has participated in workshops held for the purpose of formulating a National Drug Policy.
- RPM has assisted the Ministry of Health and Medical Stores Limited with evaluation of bids for a World Bank-financed drug procurement valued at US\$6 million. Specifically, RPM has automated this process by using the tender management module of the INVEC-2 inventory control software.

- RPM has contributed a member to an international team that analyzed options and made recommendations for restructuring trouble Medical Stores Limited
- RPM has played a leadership role in defining a program of activities for strengthening public health logistics management at the district level This work got under way in February It covers not just drugs, but also family planning and laboratory supplies

4 Collaboration

Zambia's willingness to undertake serious reform of the Ministry of Health has attracted a number of donors to the country This is a "good news/bad news" situation The good news is that it provides opportunities for donors to coordinate and even pool their resources, with each party focusing on work for which it has comparative advantages The bad news is that there is sometimes considerable confusion and even competition concerning "who is doing what "

The USAID Mission has provided clear guidance that cooperating agencies are expected to make explicit efforts to work collaboratively with other USAID projects and other donors RPM has risen to this challenge

- In response to a request from BASICS, RPM has defined the district logistics strengthening activity RPM has also taken the lead in involving a second USAID CA, that is, the FPLM Project, as well as Irish Aid's MedLabs Project in this work In sum, RPM, FPLM, and MedLabs provide the TA, and BASICS covers the local implementation costs
- RPM has also collaborated with other donors RPM was instrumental in bringing Irish Aid into the district logistics strengthening team The team as a whole is coordinating with both Danida and SIDA to ensure that certain concerns about the content of this activity receive attention Specifically, the team has committed itself to developing guidelines for quantifying drug, family planning supplies and medical supplies needs, so that this output could be provided to all District Health Boards, as part of the overall MOH reform effort

5 Most Important Achievements

As noted above, it took from June through December 1996 to identify a viable role for RPM Work actually got underway in February 1997, and has proceeded along the lines summarized above So far there hasn't been sufficient time for specific activities to mature into "important achievements " The DPS/RPM/FPLM/Irish Aid team has, however, produced a draft self-assessment tool called "DILSAT " This is being tested in two districts and is expected to contribute to a major effort to improve drug management at the district level

6 Constraints and Adjustments

The major constraints and adjustments so far have been associated identifying with activities that were acceptable to all parties in the donor-crowded Zambian environment

7 Likely Needs After End of Project

Again, as RPM's Zambia program is just getting underway, it is difficult at this point to identify a specific list of after-project needs

8 Key Documents and Products

Bates, James A *Concept Paper Strengthening Public Health Logistics in Zambia* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, December 1996

Helling-Borda, M I, C Lijdsman, M Mutukwa, J Bates, S Capper *Preliminary Report on Establishment of the Essential Drugs and Medical Supply Store* December 1996

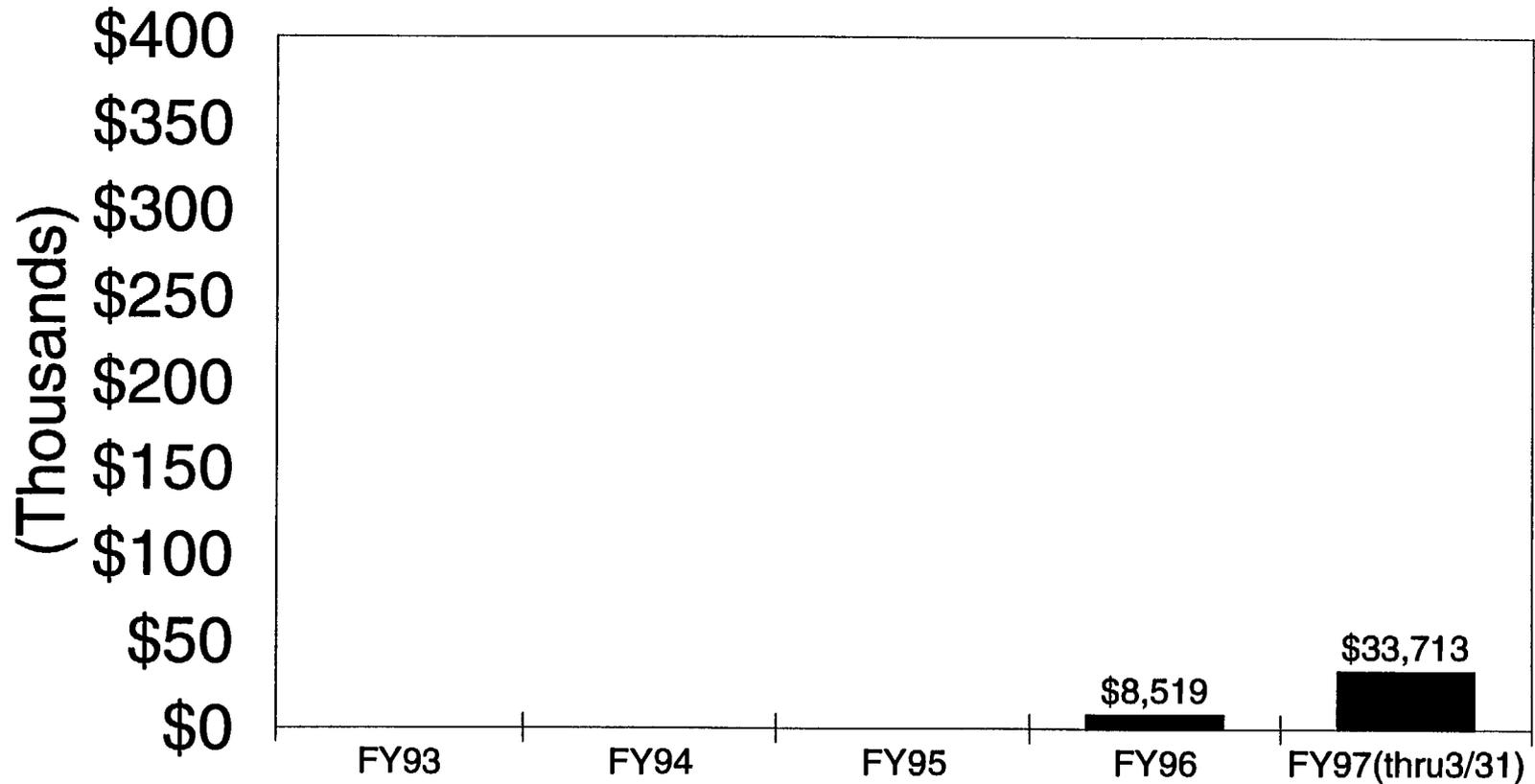
District Level Self Assessment Tool, or DILSAT

9 Inputs

Below is a graph depicting the RPM expenditures by year, for the program The graph also provides the total expenditures and/or allocations for the program Following that is a table illustrating the level of effort, in months, of RPM staff and consultant time The second table summarizes the inputs into the program by RPM and other projects and organizations

RPM Expenditures by Year

Zambia



Total Expenditures \$42,232
Total Allocations \$100,000

RPM Level of Effort

Zambia

Person Months thru 3/31/97

MSH Staff*	17
Consultants*	16
Total	33

* Assumes 7.5 hrs/day and 22 days/month

Other Inputs

Zambia

Thru 3/31/97

Other USAID*

BASICS** Local costs for workshops \$74,000

Other Donors*

Irish Aid Technical assistance

* Non-RPM contributions are estimates

** Amount budgeted by BASICS

G Poland

Program Manager Olya Duzey

1 Strategic Importance

The purpose of RPM activity in Poland is to assist local governments in the development of mechanisms for cost-effective delivery of pharmaceuticals to inpatient and out patient populations, as these jurisdictions take on more responsibility for direct delivery of health care and payment for services

- There are three USAID/Poland Strategic Objectives RPM activity falls under the third Strategic Objective "Local Government Becomes Effective, Responsive and Accountable "
- The Harvard University Data for Decision Making (DDM) Project began working on the Strengthening Local Government in Health (SLGH) Project at approximately the same time that RPM was to begin working in Poland The DDM Project would work in a number of health areas, including contracting for physician services, cost accounting, quality assurance, and local governance planning Because of potential mutual benefit under the same strategic objective, USAID/Poland suggested that RPM work in coordination with the DDM Project and carry out a program of activities for strengthening pharmaceutical management

2 Needs Assessment

Date April 1996

Key Findings and Conclusions

- Cost of drugs in Poland is perceived to be very high, with some 46% of all drug expenditures being paid for out of pocket
- There is a serious gap between actual expenditures and financing of the drug budget at the national and local levels, both inpatient and outpatient In addition, there is suboptimal coordination between legislation of prescription drug benefits and their implementation at the regional and local levels
- There is a generous publicly-funded entitlement program to provide pharmaceuticals to outpatients in certain categories, or for certain diseases In addition to the three categories of discounts available to certain patient populations, the Ministry of Health recently added another category of discounted drugs Unfortunately, no clear analysis of the financial impact of doing so was available
- Drug management information systems (MIS) are seriously lacking at the institution and local government level, and there is a lack of incentives for implementing them There were no mechanisms found for reporting expenditures by disease state, drug, or prescriber A hospital pharmacy director may be responsible for purchasing drug products, but have no knowledge of the total accounts payable, nor when they will be paid Without the information an MIS system would provide, such as information about drug consumption and prescribing patterns, and their budgetary implications, local governmental units are hampered in their ability to do strategic planning in drug management and to allocate resources objectively

- There is insufficient evaluation and monitoring of prescribing and dispensing (inpatient and outpatient) Although the concept of formulary systems is known, there are no incentives to implement formularies to improve drug selection and procurement Efficiencies that might reduce expenditures on the hospital ward, for example, result in a reduced budgetary allocation for the following year, creating a perverse disincentive to introducing cost efficiencies
- There are several undocumented problems, including the lack of appropriate drugs for inpatient use, and use of drugs purchased outside the hospital for inpatient use This has resulted in cost-shifting from inpatient to more expensive outpatient categories

3 Work Plan

In May 1996, Jagiellonian University in Krakow hosted the Steering Committee Meeting for the Strengthening Local Government in Health Project Representatives of various national, regional and local governmental, health administration, and consumer groups participated in the three-day meeting Jagiellonian University personnel presented findings of the assessments, including the RPM reconnaissance trip in April 1996, and RPM and DDM group leaders presented information on international experience that might be effective in addressing problems in all six areas described above

The initial comprehensive work plan (May to August 1996) was developed to include two phases

- a The first phase would include defining options for improving drug procurement and drug use decision making
- b The second phase would include development of interventions, testing, implementation, evaluation, and dissemination of results

The work plan was based on the assumption the RPM would receive additional funding to be able to carry out both phases Subsequently, USAID notified RPM that additional funding would not be forthcoming, so alternate work plans were developed for a level of activity that remaining funding could support

RPM developed two options to address the issues of cost-effective drug product selection and improving rational prescribing practices On Jagiellonian University's suggestion, a plan was developed for Biernacki Hospital in Krakow, which was undergoing the change from public to private ownership, with potentially increased incentives for change The two options included

- A study tour in "Hospital Formulary Development and Drug Utilization Review," to be held at the University of Arizona, or
- An assessment and workshop to be conducted at Biernacki Hospital in Krakow

Recently, Jagiellonian University counterparts indicated a preference for the study tour option

4 Collaboration

In the exploratory stages of defining RPM's role, RPM collaborated with DDM to find a reasonable fit between the objectives of the RPM Poland country program and the DDM Strengthening Local Government in Health Project. This collaboration consisted of the following activities:

- RPM met with project director for the Harvard DDM project at Harvard University to get an overview of the Strengthening Local Government in Health Project, and to plan RPM's participation in the Steering Committee Meeting to be held in May 1996.
- The Polish counterpart organization for RPM is Jagiellonian University (JU), School of Public Health in Krakow. Various departments of the school are involved in the SLGH Project, including a project coordinator and support staff. Jagiellonian University staff were very responsive to requests for information and provided logistical support for the Steering Committee Meeting in May of 1996.
- A planning meeting was held in Washington, DC in August 1996 to take advantage of the Polish counterpart for drug management's presence in the U.S. at a Harvard University School of Public Health course. A timetable of activities was developed, consistent with the original work plan, that has since been discarded.

5 Most Important Achievements

- The RPM presentation at the Steering Committee Meeting in May 1996 was very well received, creating ample support at DDM and JU for an RPM component to the SLGH Project.
- As a result, Vice Voivoda Miller of Krakow region *voivodstvo* expressed considerable interest in RPM activity in his region. Other sites also expressed interest in collaborating with RPM.
- Due to limited funding, RPM work will now be confined to organizing a study tour, designed to familiarize participants with the development and maintenance of formulary and drug utilization review systems in hospitals in the U.S. It is hoped that the study tour will be successful in introducing Polish participants to the concepts of formulary system development and drug utilization review as tools in effective drug management. Seeing how these systems are used in the U.S. and understanding their dynamic nature should enable participants to explore how these systems can be realistically implemented in Poland upon their return.

6 Constraints Encountered and Program Adjustments

- An assessment was planned for November 1995 in Poland, however, that trip was called off by USAID/Poland. Unfortunately, this deprived RPM of the opportunity to plan and carry out a standard assessment. Instead, RPM conducted a brief reconnaissance trip in April of 1996 in preparation for the May Steering Committee Meeting.
- The initial work plan developed for an RPM country program was based on assurances that additional funding would be forthcoming, however, that never materialized. The revised options for RPM work in Poland had to be considerably scaled down.

- Working essentially as a component of the SLGH Project provided both pluses and minuses. On the plus side, all parties acknowledged drug management activities as an area that would affect a number of the project component areas, including quality assurance, hospital contracting, cost analysis, and planning. Full-fledged participation in the SLGH activity might have resulted in significant measurable impact.
- Following USAID's decision not to provide additional funding, RPM is still ready to carry out a very focused, short-term activity, within the constraints of available funding.

7 Likely Needs after End of Project (EOP)

Poland is undergoing a transition in its health care system, which will result in transferring to local governmental or other administrative units greater responsibility and flexibility in managing the health care needs of their local constituents. Given its economic growth in the last several years, there may be significant opportunities for sustainable changes.

- The lessons from the study tour should be shared with other health professionals, institutions and administrative units through publications, meetings, and other means.
- Further technical assistance may be necessary to sustain changes from interventions at Biernacki Hospital.
- Evaluation of results of the intervention need to be carried out, with revisions in the strategy and/or training materials, as needed.
- Training of staff from other hospitals and other project sites needs to be carried out, using the experience at Biernacki Hospital.
- The *refundacja* program (program of publicly-funded pharmaceutical entitlements) is still in need of major reform, including a systematic review of drug utilization, auditing procedures to ensure compliance with the parameters of the program, auditing mechanisms for the "green blanks," (prescription blanks, green in color, issued to patients to pay for prescriptions not normally covered under the *refundacja* program), and a management information system, potentially tied to an automated billing system for pharmacies, to provide specific information necessary for future decision-making.

8 Key Documents

Bates, Jim and Olya Duzey *RPM Poland Work Plan (revised)* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, August 1996

Duzey, Olya M *Revised Options for RPM Poland Activity* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, January 1997

57

Duzey, Olya M *RPM Poland Trip Report* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, July 1995

Duzey, Olya M Poland *The Pharmaceutical Market* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, July 1995

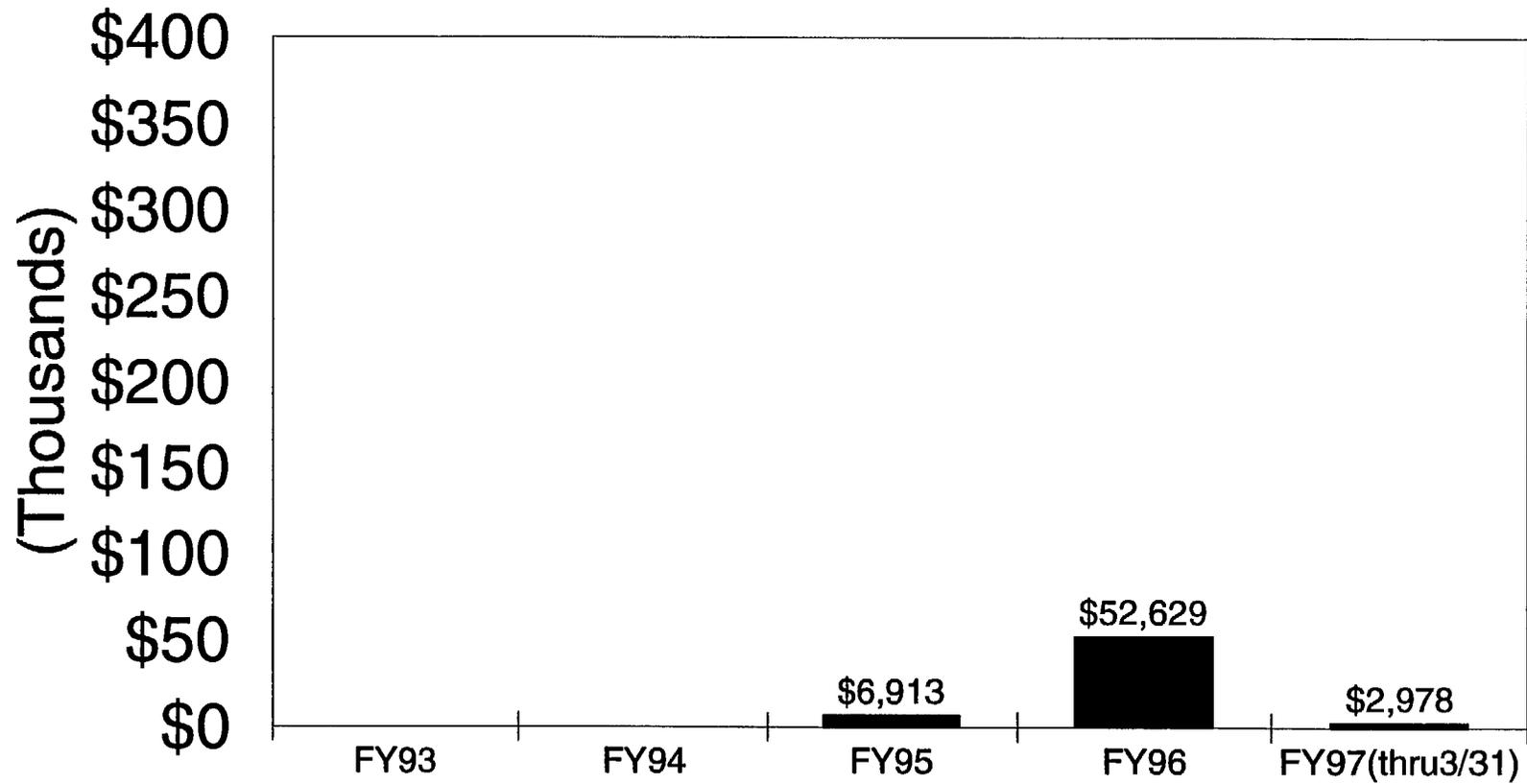
Duzey, Olya M *Strengthening Local Government in Health Steering Committee Meeting, May 7-9, 1996* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, May 1996

9 Inputs

Below is a graph depicting the RPM expenditures by year, for the program. The graph also provides the total expenditures and/or allocations for the program. Following that is a table illustrating the level of effort, in months, of RPM staff and consultant time. The second table summarizes the inputs into the program by RPM and other projects and organizations.

RPM Expenditures by Year

Poland



Total Expenditures \$62,520
Total Allocations \$100,000

RPM Level of Effort	
Poland	
Person Months thru 3/31/97	
MSH Staff*	3 2
Consultants*	0 0
Total	3 2

* Assumes 7 5 hrs/day and 22 days/month

Other Inputs		
Poland		
Thru 3/31/97		
<u>RPM</u>	<u>Description</u>	<u>Value</u>
Subcontracts	Hospital drug management study tours	\$14,380
<u>Other USAID*</u>		
DDM	Coordination of strengthening local government in health	

* Non RPM contributions are estimates

H Central Asia Infectious Diseases Program (CAIDP)

Program Manager Tom Moore

1 Strategic Importance

- Reports of the World Health Organization (WHO) in 1995 indicated that acute respiratory infection (ARI) (25-51%), and diarrhea (10-15%), are major contributors to infant mortality in children under five in central Asian countries. RPM's activities are part of a program requested by USAID's Bureau for Europe and New Independent States (ENI), to develop an infectious disease program in the central Asian republics of Uzbekistan, Kyrgyzstan and Kazakhstan (CAIDP). RPM work focused on drug availability and prescribing for these two priority health problems.
- RPM's work on this activity contributes directly to USAID Global Center for Population and Health's third Strategic Objective: *Increased use of key child health and nutrition interventions*.
- RPM has used the work in Central Asia to test PASS, a software program for the quantitative analysis of prescribing practices. This test has been very successful. Following discussion with BASICS, RPM plans to build on this experience and develop a specialized tool for the analysis of Integrated Management of Childhood Illnesses prescribing practices.

2 Needs Assessment

- RPM did not have the opportunity to conduct a pharmaceutical sector assessment prior to the start up of this activity. Use of RPM indicators was, however, incorporated into the work.

3 Work Plan

September 1996- June 1997 (in progress)

Summary of Key Activities

- RPM conducted a reconnaissance visit that provided the following information:

Tracer drugs were not available for free distribution or use, including antibiotics for ARI. Very limited quantities of oral rehydration solution (ORS), provided by UNICEF, were available for diarrhea treatment at outpatient clinics.

Out of pocket expenditures are necessary, *oblast* budgets provide only 7 to 10 % of health facility needs.

Geographic inaccessibility is a reality, pharmacies averaged 17 km or more from a patient's homes in rural areas, and transportation is difficult to obtain.

Prescribing information is difficult to collect, it is partially available from the patient records at primary health care facilities.

Poor drug information systems exist, health care facilities do not document receipts and disbursements of drugs

- RPM worked with BASICS to refine their health facility survey questionnaires, so as to measure drug availability and prescribing behavior for diarrheal disease and ARI in health clinics and hospitals
- RPM's primary contribution to the project was to strengthen the CDC/BASICS team by providing specialized input concerning drug management RPM provided a quantitative analysis of drug use practices, which is being used by CDC and BASICS in designing an educational program for primary health care providers
- RPM made a special effort to evaluate behavior of retail drug sellers for treatment of diarrhea and upper respiratory infection in private and public pharmacies Data for this purpose were gathered by simulated purchase survey
- RPM is also helping to strengthen the capacity to monitor availability of drugs for diarrheal disease and ARI in health care facilities, which could carry over into drug monitoring for all diseases

4 Collaboration

- RPM collaborated with CDC and BASICS in developing and implementing the CAIDP work through resident technical advisors based in the central Asian region, and operational support personnel and technical backstopping from Washington and Atlanta
- RPM coordinated with BASICS for a national technical officer to do reconnaissance work in Uzbekistan and Kyrgyzstan, saving training time and project funds
- RPM coordinated with BASICS in the production of data collection questionnaires, and data analysis and report preparation for the facility survey, eliminating the need for a separate survey

5 Most Important Achievements

- RPM utilized MSH's software program, PASS (Prescription Analysis Software System) to analyze the survey data and field test the software
- Through PASS reports, RPM provided data illustrating the cost implications of irrational prescribing practices on drug expenditures For the sample studied during the survey, prescribing according to the IMCI norms of treatment (average cost per patient encounter--\$1 00 for diarrhea, \$1 80-\$2 07 for pneumonia), would have resulted in the following savings over the prescribing patterns observed in health facilities
 - ▶ Diarrhea Kazakhstan--\$0 23 per patient encounter (19%), Kyrgyzstan--\$2 42 per patient encounter (71%), and Uzbekistan--\$2 22 per patient encounter (69%), and
 - ▶ Pneumonia Kazakhstan--\$2 98 per patient encounter (59%), Kyrgyzstan--\$12 86 per patient encounter (88%), and Uzbekistan--\$3 09 per patient encounter (55%)

- RPM provided data illustrating the cost implications of cost inefficient drug procurement by comparing actual procurement costs of drugs prescribed with the unit costs given in the *International Drug Price Indicator Guide*. Potential cost savings of prescribed drugs in the health facilities sampled were Kazakhstan--\$202 63 (71%), Kyrgyzstan--\$119 61 (39%), and Uzbekistan--\$191 40 (43%)
- RPM demonstrated that availability of the products of choice for diarrhea and pneumonia in the three *oblasts* surveyed varied, but was generally low. In the health facilities surveyed, 71-90% of the cases diagnosed with diarrhea received the product ORS, and for pneumonia, only 10-50% of the cases received the antibacterial, co-trimoxazole. In the simulated purchase survey of drug sellers in Almaty *oblast*, the recommended drugs were available for dispensing only 56% of the time for diarrhea, and 69% of the time for ARI
- RPM trained six local data collectors in the rational prescribing techniques for simulated purchase surveys in public and private sector pharmacies. Using the data from the survey, RPM demonstrated the cost implications of irrational use by drug sellers. Comparing cost of inappropriate recommendations by drug sellers with norms of treatment (\$1 00 for diarrhea, and \$0 11 for upper respiratory infections), excess expenditures by caretakers amounted to
 - Diarrhea--\$0 56 per encounter (36%), mainly for antibiotics and antidiarrheals, and
 - Upper respiratory infections--\$3 49 per encounter (97%), mainly for inappropriate recommendations of antibiotics and medicinal cough preparations

6 Constraints Encountered

- Systematic documentation of drug procurement, receipt, and distribution is not done in health care facilities, which makes information on drug management difficult to obtain
- Coverage of simulated purchase surveys was limited to one district in Kazakhstan, because of logistics and program time constraints

7 Likely Needs After End of Project

- Health care workers need training in pharmacy management techniques, such as rational prescribing, drug inventory control, and possibly drug cost recovery
- MOH personnel need assistance in adapting survey questionnaires to develop a monitoring system of prescription patterns, and their cost implications
- A simulated purchase survey should be carried out in Kyrgyzstan and Uzbekistan in order to provide a country-specific picture of drug use. At the moment, only results from Kazakhstan are available
- Provide training in rational drug use to private sector drug sellers
- Provide information on rational drug use to consumers and the general population

8 Key Documents and Products

Ickx, P , and T Moore *Central Asia Infectious Diseases Program, Health Facilities Survey, Rational Pharmaceutical Management* Almaty, Kazakhstan January 1997

Ickx, P , and T Moore *Central Asia Infectious Diseases Program, Simulated Purchase Survey, Rational Pharmaceutical Management* Almaty, Kazakhstan December 1996

These two documents are included in the larger BASICS, CDC, RPM Health Facility Assessment Report for CAIDP which is in the draft stage at this time

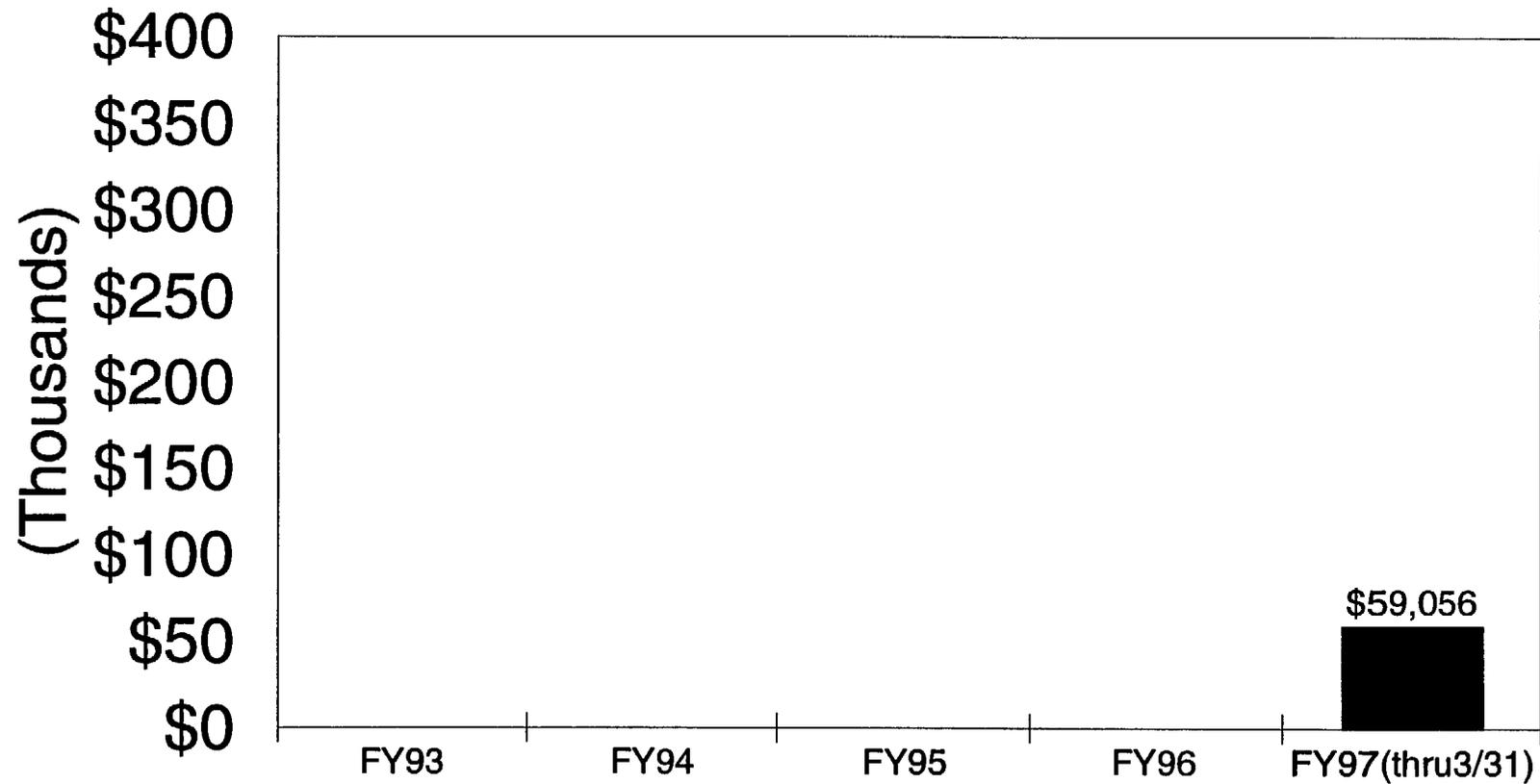
Slide show, "Summary Results of Central Asia Infectious Diseases Program, Health Facilities Survey and Retail Outlet Simulated Purchase Survey, January 1997," presented at USAID State of the Art Conference in Nairobi, Kenya in June 1997 by Ron Waldman, BASICS director

9 Inputs

Below is a graph depicting the RPM expenditures by year, for the program The graph also provides the total expenditures and/or allocations for the program Following that is a table illustrating the level of effort, in months, of RPM staff and consultant time The second table summarizes the inputs into the program by RPM and other projects and organizations

RPM Expenditures by Year

Central Asia Infectious Disease



Total Expenditures \$59,056
Total Allocations \$110,000

**RPM Level of Effort
Central Asia Infectious Diseases Project
Person Months thru 3/31/97**

MSH Staff*	38
Consultants*	00
Total	38

* Assumes 7.5 hrs/day and 22 days/month

**Other Inputs
Central Asia Infectious Diseases Project
Thru 3/31/97**

Other USAID*

BASICS In-country coordination of survey activities

* Non RPM contributions are estimates

I Tools' Development and Information Dissemination

1 Strategic Importance

- RPM is mandated to work in the areas of tools' development and information dissemination. The project is expected to build on the experience of MSH Drug Management Program (DMP) with computer software programs for specific aspects of drug management, such as inventory management and drug needs quantification.
- As a specialized experimental project, RPM is mandated to disseminate knowledge gained and lessons learned through the project.

2 Needs Assessment

Note: No formal assessment was done for this program.

Key Findings and Conclusions

- RPM could not find any easily available computer programs for drug needs quantification, tender management, or analyzing prescribing patterns. The project could also not find software that included all required operations for inventory management for pharmaceuticals in a stable, tested system.
- RPM saw a need to coordinate the varied efforts to develop rapid indicator-based assessments methods. The methods needed to be field tested and described in a manual in such a way that others could use them to conduct assessments of their own system.
- RPM was the first project to introduce the concept of restricted drug formularies in Russia, and therefore needed a manual to teach pharmacists and physicians how to establish a formulary in their institution. The same is true for the concept of drug utilization review, for which the project has also written a manual. Both of these manuals will be used outside of Russia, and the formulary manual has already been translated into Spanish for use in Ecuador.

3 Collaboration

- RPM materials have been placed in the offices of the Centers for Disease Control in Atlanta, University of Research Corporation in Bethesda, the BASICS project in Arlington, the MOH in Quito, Ecuador, and the Euro Health Group in Denmark.
- In December 1996 RPM participated in a Logistics Software Sharing Event organized by the FPMD project and CDC. RPM demonstrated INVEC-2 and discussed logistics software issues with other organizations active in this field.
- RPM has written five *RPM Project Updates* to be included with the *INRUD News*, a newsletter distributed to more than 2,800 people worldwide. RPM produces the *Update*, and makes copies, but INRUD includes it in the newsletter mailing at no charge.

- RPM has provided substantial numbers of copies of the *International Drug Price Indicator Guide* to the World Bank, the World Health Organization, and the Essential Drugs Program
- In October 1996, RPM contributed to a course entitled “Improving Drug Supply for Primary Health Care” with the International Dispensary Association in Amsterdam
- RPM staff have contributed significantly to the second edition of *Managing Drug Supply*, a textbook written by the MSH Drug Management Program in collaboration with WHO

4 Most Important Achievements

- RPM has produced the following manuals or publications
 - ▶ *Rapid Pharmaceutical Management Assessment An Indicator-Based Approach*, a manual that details how to conduct an indicator-based assessment of the pharmaceutical sector. The indicators in this manual were harmonized with those developed under the Latin America/Caribbean Health and Nutrition Sustainability Project. The manual has also been translated into Spanish
 - ▶ RPM held a workshop in Santa Cruz, Bolivia, to introduce the concept of indicator-based assessments, and train participants in their use. The text for the 33 participants was the Spanish version of the *Rapid Pharmaceutical Management Assessment An Indicator-Based Approach* manual
 - ▶ Three editions (1992-1993, 1993-1994, and 1995) of the *International Drug Price Indicator Guide*, which gives pharmaceutical prices from more than ten international suppliers for comparison and study. The *Guide* is routinely sent to almost 300 individuals and organizations worldwide
 - ▶ Detailed reports of the pharmaceutical sector assessments RPM conducted in Nepal, Ghana, the OECS, Ecuador, Mozambique, Ukraine, El Salvador, and three *oblasts* in Russia.
 - ▶ *A Manual for the Development and Maintenance of Hospital Drug Formularies*, originally designed for Russia, but expanded to give guidelines for worldwide use. This manual has been translated into Russian and Spanish
 - ▶ A preliminary set of training materials based on the second edition of *Managing Drug Supply*, the landmark text written by MSH. A complete set of materials is in progress, and, when completed, can be translated or given to others to conduct training sessions
- RPM has produced the following computer software programs
 - ▶ INVEC-2 inventory control and management software, installed in St. Vincent and the Grenadines, St. Lucia, Grenada, Dominica, Antigua, Cambodia, Zimbabwe, Paraguay, and Mexico. The program and its manual exist in English, Spanish and Russian. Demonstration copies of the software have been sent to more than 50 people around the world

- ▶ PASS prescription analysis software system, field-tested in Russia, Kazakhstan, Uzbekistan, and Kyrgyzstan. The software analyzes prescribing patterns based on user-defined study criteria. A beta version of the software was sent to more than ten people for testing and comment.
 - ▶ ESTIMED drug needs quantification software, field-tested in Yemen. This software program can use both consumption and morbidity data to estimate drug needs. The software and manual are both completed products.
 - ▶ ECPRO-2 tendering and procurement software, used by the Eastern Caribbean Drug Service to manage their pooled procurement system. ECDS has used this version of the software in their last two tender cycles. RPM plans to produce a manual for the software.
- As a quality control measure, RPM staff have established checklists and procedures for writing, formatting, and producing reports. These procedures are documented in the *DMP/RPM Standard Operating Procedures* manual. In addition, the project has developed a customized WordPerfect macro to assist staff in writing and formatting trip reports.
 - RPM staff have given presentations at the following conferences: American Public Health Association, Drug Information Association, National Council on International Health, the National Medicinal Drugs Conference in Australia, the Man and Drugs Congress in Moscow, Russia, and at the World Health Organization.
 - RPM has sent project information to more than 50 interested parties worldwide, in addition to the software copies, and the larger mailings of 250 for the *International Drug Price Indicator Guide*, of 200 for the *Rapid Pharmaceutical Management Assessment: An Indicator-Based Approach*, and of more than 2,800 for the *INRUD News*.
 - RPM established full e-mail access through the Internet in 1994, and has had a presence on World Wide Web since mid-1995. This has been the source of numerous inquiries for information.

5 Constraints Encountered and Program Adjustments

- Since April 1996, at the request of USAID, RPM stopped funding *International Drug Price Indicator Guide*. USAID's stated reason was that the guide might be construed as promoting non-US source drugs. The product is still produced and delivered by RPM.

6 Likely Needs After End of Project (EOP)

- Dissemination of the documents and software programs produced under RPM should continue after the end of the project, and support for the present INVEC-2 installations should continue as well.
- There is a need for an integrated "suite" of drug management software programs that can be used together or separately for all aspects of drug management. This suite should be Windows-based and available on CD-ROM. RPM has developed "standalone" programs that could be developed into this suite.
- Dissemination and support of training materials should continue, especially with the publication of the second edition of *Managing Drug Supply*.

7 Key Documents and Products

Management Sciences for Health /Rational Pharmaceutical Management Project *Rapid Pharmaceutical Management Assessment An Indicator-Based Approach* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, July 1995

Management Sciences for Health/Rational Pharmaceutical Management Project *Evaluacion Rapida del Manejo de Productos Farmaceuticos Un Enfoque a Base de Indicadores* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, July 1995 (Translated into Spanish in August 1995)

Management Sciences for Health/Rational Pharmaceutical Management Project *P A S S Prescription Analysis Software System User Manual* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, 1995

Management Sciences for Health/Rational Pharmaceutical Management Project *INVEC-2 Inventory Management Program Operator's Manual* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, August 1995

Management Sciences for Health/Rational Pharmaceutical Management Project *INVEC-2 Sistema de Gestión de Inventarios, Manual del Operador* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, August 1995

Management Sciences for Health/Rational Pharmaceutical Management Project *ESTIMED System Manual* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, June 1997

Management Sciences for Health *International Drug Price Indicator Guide, Guía Internacional de Precios de Medicamentos, Indicateur de Prix Internationaux des Médicaments* Boston, MA Management Sciences for health, 1992, 1993, 1994, 1995 (Updated annually)

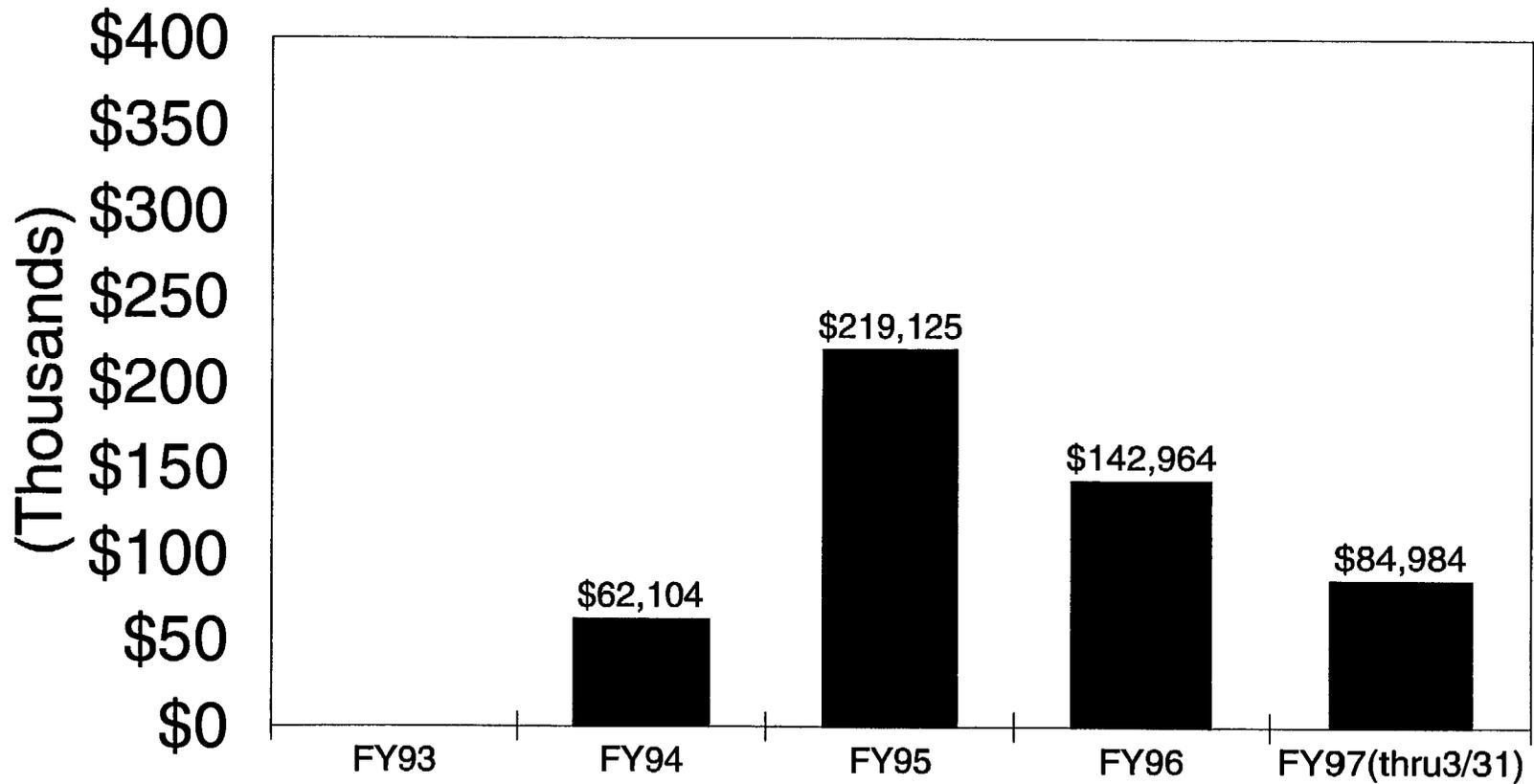
Rational Pharmaceutical Management Project *RPM Project Updates* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, February 1995, September 1995, February 1996, September 1996, and February 1997

8 Inputs

Below is a graph depicting the RPM expenditures by year, for the program. The graph also provides the total expenditures and/or allocations for the program. Following that is a table illustrating the level of effort, in months, of RPM staff and consultant time. The second table summarizes the inputs into the program by RPM and other projects and organizations.

RPM Expenditures by Year

Tools' Development/Info Dissemination



Total Expenditures \$509,177

RPM Level of Effort	
Tools' Development/Information Dissemination	
Person Months thru 3/31/97	
MSH Staff*	37.9
Consultants*	0.5
Total	38.4

Assumes 7.5 hrs/day and 22 days/month

Other Inputs		
Tools' Development/Information Dissemination		
Thru 3/31/97		
<u>RPM</u>	<u>Description</u>	<u>Value</u>
Subcontracts	JET INVEC-2 Manual	\$9,960
	JET PASS Manual	\$6,525
	JET INVEC-2 Manual update	\$1,125
	JET ESTIMED Manual	\$7,110

** Non RPM contributions are estimates

J Cost Model for Reproductive Health Commodities

1 Strategic Importance

The USAID Office of Health and Nutrition asked the RPM and MotherCare Projects to assist in the development of an approach for costing reproductive health (RH) commodities used in reducing maternal mortality (including drugs for STDs). This approach seeks to quantify the pharmaceutical cost implications of RH services in developing countries that intend to implement the recommendations of the Population Conference in Cairo. The overall goal is to develop a methodology that will assist donors and decision-makers to estimate the cost of supplying the commodities required to meet the needs for 25 RH problems.

This work directly supports USAID's second strategic objective in Population and Health, which is "increased use of safe pregnancy, women's nutrition, family planning and other reproductive health interventions," by identifying ways to improve the availability and access to safe, effective and, affordable RH drugs, medical supplies, and basic equipment.

2 Background

Women's RH problems are a leading cause of mortality in developing countries. It has been estimated that of all women who die each year of pregnancy-related causes, 99 percent of them die in developing countries. The global cost of providing women's RH care and especially of ensuring safe motherhood and STD/HIV/AIDS prevention (excluding family planning services) has been estimated by experts and reported to cost \$6.3 billion in 2000 and \$7.6 billion in 2015 (UN, 1995). However, this estimate is based on numerous assumptions that need to be considered more closely. Moreover, one overall estimate is no use to donors or most country decision-makers for determining how to go about improving the RH care delivery system, or how to adequately supply and equip service delivery points. Such decisions should be based on careful consideration of the cost implications and of the factors that determine cost, such as the choices and unit prices of pharmaceuticals, supplies, and equipment, the prevalence of the RH problems, and the utilization of RH services. The overall objective of this study is to develop a simple approach to estimate the cost of supplying expendable RH commodities to meet the supply needs for 25 RH problems and services.

3 Work Plan

Dates November 1996

Summary of Key Activities

The development of this approach has been divided into the following four stages, of which the first two are complete. Planning for the other two stages is underway.

- Stage 1 Estimate the costs of treating one episode of a defined set of RH problems based on a set of RH services
- Stage 2 Use published data to model a cost estimate for pharmaceuticals, medical supplies, and equipment

- Stage 3 Carry out country studies and use country-specific data to estimate costs of commodities, based on local epidemiological data, standard treatment guidelines, and supply costs
- Stage 4 Refine the cost estimates by accounting for country-specific utilization rates of local RH services, RH commodities' availability, and supply system inefficiencies

4 Coordination

- RPM has worked closely with staff of the MotherCare Project

5 Most Important Achievements

Stage 1

- A working group composed of RPM and MotherCare staff defined a set of 25 priority reproductive health problems and services, and agreed on the types and quantities of drugs and expendable medical supplies required. The 25 problems and services are grouped under four headings: antenatal care, safe and clean delivery, maternal and neonatal complications, and reproductive tract infections. Other reproductive health problems, such as domestic violence, cancer, infertility, etc. are excluded at this time from the cost estimate. Family planning supplies have already been costed in other projects.
- A simple equation for estimating costs has been defined

$$P * Q = \text{Cost Estimate of RH Commodities}$$

“P” stands for the unit price of the commodities and “Q” for the quantity or number of RH problems or services for which commodities are provided or need to be provided. For stages one and two, reasonable assumptions were made about the following factors:

- ▶ the choice of drugs and supplies for each RH problem was made according to internationally accepted standard treatment guidelines, not accounting for variation in case severity or management practices
- ▶ the unit costs of drugs were based on the UNIPAC prices plus 20% for freight and insurance,
- ▶ the reliability of the published sources of prevalence data was acceptable,
- ▶ the number of RH services seekers in each health care delivery setting was based on published data,
- ▶ the cost-effectiveness of the therapies' costs was optimal, and
- ▶ the cost was based on the delivery of facility-based RH services

- The cost estimate model includes the RH standard treatment guidelines (STG) for the 25 selected problems and services, that is, the normative standard adapted from what is current, effective, and desirable in health care facilities based on the experience of the MotherCare Project and WHO. The working group assessed the implications of using these guidelines and identified two limitations. First, the cost of the commodities needed to treat one episode following these STGs seemed affordable in some cases and not so in others. The high cost of some therapies posed questions to the feasibility of actual compliance with these STG. Second, the estimate is based on a very simplified facility-based case scenario, which does not account for antibiotic resistance, treatment failure, misdiagnosis, varies clinical severity, and therefore length of treatment, compliance, health care provider's training, etc.
- A cost model spreadsheet was designed for modeling a ballpark summary figure for the total cost of the RH drugs and supplies. The commodities for treating the selected problems and services were divided into two groups: equipment and drugs, and expendable medical supplies. The spreadsheet estimates the cost of equipment as grouped into nine RH cost components, and the cost of drugs and expendable supplies as grouped into 16 RH cost components according to the STG. These RH cost components can be used incrementally to estimate the cost of changing coverage targets for each RH service in three dimensions: expanding the number of health care workers that deliver RH services, the number of facilities able to provide the services, and/or the number of women covered or cases managed. The RH cost components are:
 - ▶ One health worker component: Equipment that should be for the personal use of trained staff who deliver RH services, and therefore the cost implication of improving or expanding RH services depends on the number of human resources in the target countries.
 - ▶ Eight health facility components: Equipment that should be part of the standard set of PHC and referral health facilities, where target RH services are to be delivered, and whose total cost depends on the number of facilities to be upgraded.
 - ▶ Sixteen drugs and supplies components: The total cost depends on country-specific facility utilization and prevalence rates, or on the specific objectives of an intervention project.
- RPM has made a start on developing a country-specific database consisting of the prevalence rates of the target RH problems, and estimates of health workforce from published sources.

6 Constraints Encountered and Program Adjustments

- Although effort has been made to include "the best practice," this study does not intend to ensure the cost estimate includes the most effective alternatives. Further research, out of the scope of this study, would be necessary to accomplish that.
- While it is important to have a global estimate for overall calculations, the pitfalls of calculating one based on published information are numerous. These include: poor quality of data at the global level, country-specific differences in treatment guidelines, commodities of choice, and commodity prices, levels of utilization of reproductive health services that differ from theoretical need, failure to account for current availability of reproductive health commodities, and inefficiencies in the supply and use of reproductive health resources.

- Thus, in order to have a realistic cost estimate and address some of these problems, it is necessary to integrate country-specific information on reproductive health policy and practice into the cost model. Instead of aiming at having a single global estimate, a number of estimates will be calculated. This will be undertaken by conducting several country studies that will be representative of the global situation (that is, different levels of socio-economic development and maturity of the reproductive health program). In these countries information will be gathered on country estimates of prevalence and incidence, country-specific standard treatment guidelines, RH pharmaceuticals of choice, and cost, availability and utilization patterns of these pharmaceuticals. The information from these studies will inform the global modeling process and the resulting cost estimates can be used for sensitivity analysis.

7 Likely Needs After End of Project (EOP)

- Disseminate the RH cost approach to facilitate policy dialogue and leverage of other donors' funds to provide RH commodities
- Facilitate the implementation of this model by other USAID-funded projects
- Further develop the RH formularies
- Carry out cost-effectiveness studies
- Carry out drug use evaluation (DUE) studies
- Develop a training package to disseminate the RH cost approach
- Assist in the implementation of the model as a cost planning tool in at least one country

8 Key Documents and Products

Cost Model Presentation Notes (Stages 1 and 2)

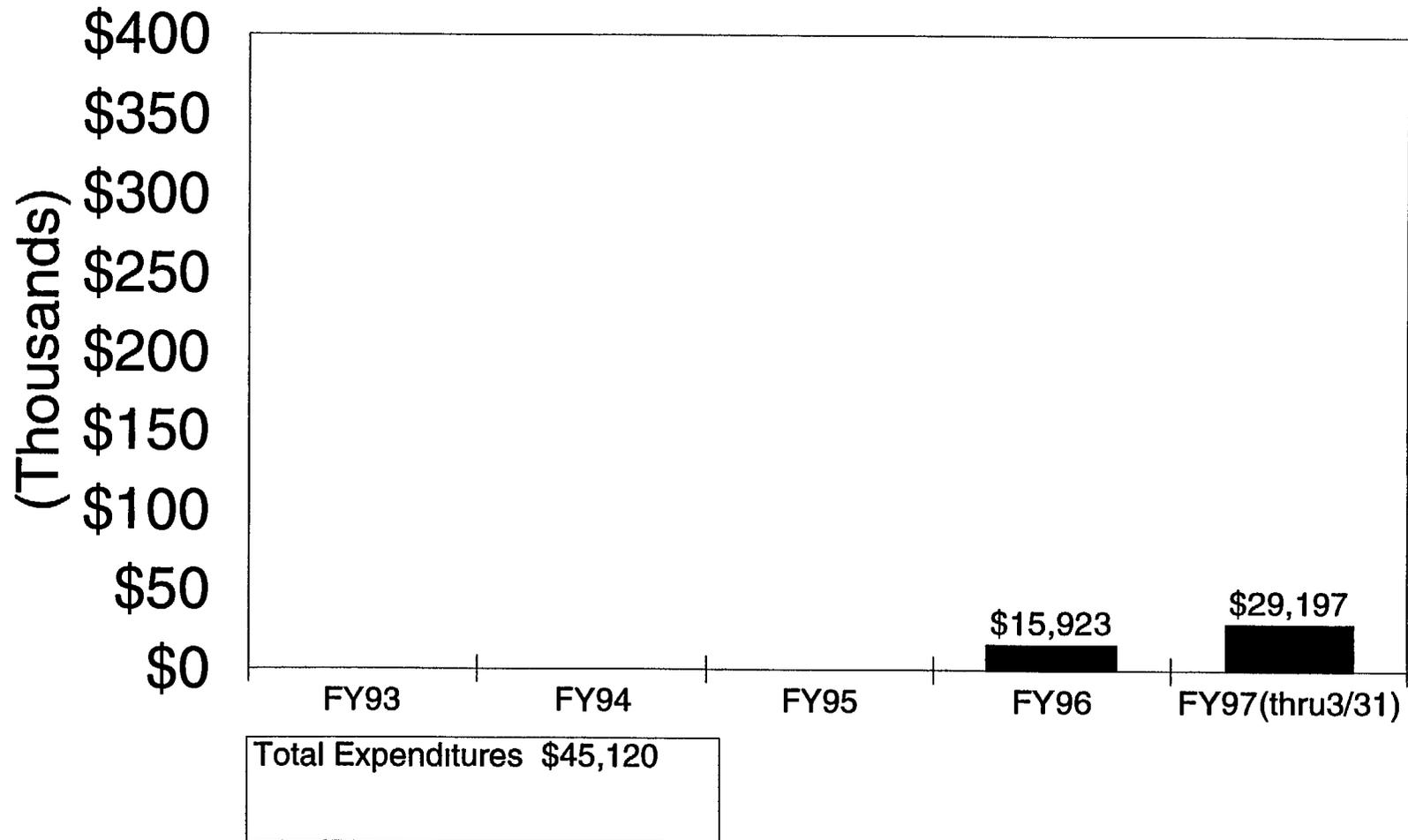
Reproductive Health Prevalence, Human Resources and Facilities database (in progress)

9 Inputs

Below is a graph depicting the RPM expenditures by year, for the program. The graph also provides the total expenditures and/or allocations for the program. Following that is a table illustrating the level of effort, in months, of RPM staff and consultant time. The second table summarizes the inputs into the program by RPM and other projects and organizations.

RPM Expenditures by Year

Reproductive Health



48

**RPM Level of Effort
Reproductive Health
Person Months Thru 3/31/97**

MSH Staff*	3 1
Consultants*	0 3
Total	3 4

* Assumes 7.5 hrs/day and 22 days/month

**Other Inputs
Reproductive Health
Thru 3/31/97**

Other USAID*

MotherCare Technical assistance for collaboration in developing cost model

*Non RPM contributions are estimates

K Summary of Recently Under Way of Incipient Activities

Country Programs

REDSO Eastern and Southern Africa Logistics Initiative

USAID's Regional Economic Development Office has within its Health Sector portfolio a set of what it calls "networking activities." These are programs that seek to promote cross border exchange among countries in the region concerning topics of common interest. Among the networking activities already underway are ones that focus on health financing, adolescent health, and quality assurance in health care. REDSO wishes to launch an additional one for logistics management.

The point of departure for what has come to be called the "Regional Logistics Initiative" is successful work carried out in Kenya on "Distribution Resource Management" by the Family Planning Logistics Management (FPLM) Project. The idea is to capitalize on successful activities identified within countries and share the results throughout the region. REDSO has engaged RPM to provide specialized expertise in drug management.

To-date, RPM's contribution has consisted of participating in planning discussions, preparation of concept papers, and participating in a workshop in Mombasa attended by MOH and NGO staff from nine countries. RPM has suggested focusing this activity on the theme of sharing experiences concerning the consequences, both intended and unintended, of health sector reform for logistics management. Six countries have been identified to participate in this activity, including Kenya, Tanzania, Zambia, Mozambique, Uganda, and Eritrea.

The provisional work plan calls for RPM and FPLM to collaborate in assessing the logistics consequences of health reform in these countries between May and September 1997 and then to present results at a workshop to be held in the region in October. The purpose of the workshop is to formulate country-specific work plans to be implemented over the coming two to three years.

The USAID Africa Bureau has allocated \$200,000 to RPM for 1997, part of which is intended to support work on the REDSO Regional Logistics Initiative.

Key Documents

REDSO/ESA Logistics Initiative Preliminary Work Plan

J A Bates, concept paper entitled *Better Practices in Logistics Management: A Reflection on What We Took In*, May 1997

Workshop for Quality Improvement for Reproductive and Child Health in Eastern and Southern Africa, Proposed Country Activities/Priorities, Mombasa May 1997

Peru

In 1996 and 1997, USAID Peru allocated a total of \$99,000 in field support funds to RPM. Despite a brief reconnaissance visit and a number of long distance communications, it has not been possible to define this country program. Recent comments from the Mission's Health and Population Officer suggest that the money allocated to RPM is regarded as "contingency funding" pre-positioned for the day when the Mission identifies a suitable need in drug management. RPM has discussed with the Global Bureau the possibility that some of the Peru field support allocation could be used to fund all or part of a country study for the Reproductive Health activity, which is described above.

Key Documents None

Bangladesh

In September 1996, USAID Bangladesh launched the National Integrated Population and Health Program (NIPHP). This project will be implemented by seven partners, including both international USAID contractors and local NGOs. The partners will attempt to define and implement a basic services package consisting of the following elements: family planning, reproductive tract infections and STDs, maternal health, child health, selected communicable vector borne diseases, and locally endemic diseases. To implement this basic services package, the project's partners will work through a group of 40 or more local NGOs.

One of the objectives of the project is to make the NGOs as financially self-sufficient as possible. One means of achieving this will be to implement drug cost recovery programs. Most of the NGOs are, in fact, already selling drugs for nominal charges, with the result that cost recovery rates are far below replacement costs. USAID has engaged RPM to assist with designing and implementing systems that will recover substantially all drug costs. RPM has responded by producing a preliminary work plan to be implemented over a two-year period, beginning in October 1997. An important assumption is that RPM's role will be an advisory one, and that the primary implementors will be the NIPHP partners. Prominent among the partners in Bangladesh is the Bangladesh Rural Advancement Committee (BRAC), a well established local NGO that has a good track record in drug sales activities.

USAID Bangladesh has allocated 1997 field support funding of \$250,000 to support RPM's contribution to the collective effort.

Key Documents

J A Bates Memo, *Results of September 25-28 Visit to Dhaka*, September 28, 1996

J A Bates, *Drug Management Work Plan for the Bangladesh National Integrated Population and Health Program*, February 1997

Hungary

Drug over-utilization, irrational drug product selection, and inappropriate prescribing, along with the pharmaceutical payment policies that perpetuate these behaviors, are some of the main problems of the pharmaceutical system in Hungary USAID/Hungary has asked RPM to develop a two-year plan of activities aimed at defining the magnitude of these problems and developing strategies for addressing identified problems The first of RPM activities will be an assessment of the drug management system late in the fall of 1997 It is expected that the findings of this assessment will define the baseline for policy dialogue on payment incentives, and rational prescribing and drug use The assessment findings will also determine the type and feasibility of the ensuing interventions RPM would undertake RPM has already assigned an activity manager, and started to gather relevant information and contact resource people in preparation for this assessment

On April 25, USAID health economist Susan Matthies briefed staff of RPM-Worldwide and RPM-Russia on the mission's health activities already underway Based on this information, the group discussed the main steps for introducing RPM activities in Hungary USAID/Hungary will allocate approximately \$400,000 RPM agreed to prepare a detailed two-year work plan and budget after an initial reconnaissance visit and the pharmaceutical assessment late in the fall The time frame for RPM activities was defined by USAID/Hungary's phase-out date, which is September 1999, and which coincides with the end of the extension of MSH CAs

Key Documents None

Central Level Activities

Integrated Management of Childhood Illnesses

The Integrated Management of Childhood Illnesses (IMCI) is a health promotion strategy designed to reduce significantly global mortality and morbidity associated with the major causes of disease in children and to promote their healthy growth and development The World Health Organization, Division of Child Health and Development (WHO/CHD) began implementation of IMCI in 1996 As part of its leadership role in promoting IMCI, WHO/CHD has identified three components that form the framework for the implementation of the IMCI strategy These include

- improvement of the case management skills of health staff in management of childhood illness,
- improvement in the health system needed to allow effective management of childhood illness, and
- improvement of family and community practices

WHO/CHD has also identified operational research in these three areas as a high priority activity to inform continued IMCI planning and implementation

In support of WHO/CHD efforts, USAID has coordinated certain initiatives that have involved the RPM project. In July 1996, RPM participated with PAHO, USAID and BASICS in the planning meeting that led to the formulation of the LAC Regional IMCI Initiative. In support of LAC Regional IMCI activities, RPM proposed collaborating with other team members to develop and test an IMCI Drug Management Assessment Module to be integrated into other materials being developed by the initiative. RPM would also present a workshop on how to use the assessment module.

USAID also coordinated an IMCI operations research (OR) meeting in May 1997. The meeting included representatives from WHO/CHD, UNICEF, CDC, USAID, and several USAID-funded collaborating organizations. The objectives of the meeting were to identify priority areas and specific topics for OR related to IMCI, identify opportunities, resources, and capabilities for carrying out OR in these priority areas, and to identify coordination and follow-up mechanisms to maximize effective exchange and application of OR results in these areas.

WHO/CHD has identified improving the supply and management of essential drugs and vaccines as a critical part of improving the health system. WHO/CHD, in its document *Priorities for Operational Research*, stated that more needs to be learned about possible mechanisms to improve the availability of drugs in health care facilities.

In response to the identified need for support in improving the supply and management of essential drugs and vaccines, RPM representatives attending the May 1997 meeting presented an overview of RPM technical areas and provided a summary of study results from the Central Asia Infectious Diseases Program (CAIDP) Health Facility Survey. The purpose of the OR study was to provide data on the availability of drugs to treat diarrheal disease and acute respiratory infections in children under five and to provide data on prescribing practices.

Using prescriptions generated by physicians and *feldschers* (equivalent to physician's assistants in the US) as the data source, the goal of the study was to demonstrate that appropriate treatment is less expensive than current practices. To facilitate the collection and analysis of drug prescriptions, RPM developed the Prescription Analysis Software System (PASS). RPM is interested in developing PASS into a practical, self-assessment problem-solving tool that others may use to replicate this study on a routine basis for purposes of supporting implementation of IMCI.

Putting together the results of the LAC Regional IMCI Initiative and the WHO/CHD meeting, what is emerging is an RPM program for developing an "IMCI" drug management assessment tool. This product would have two parts: an indicator-based method for assessing drug product selection, procurement, distribution and availability, and a quantitative prescription analysis method based on RPM's PASS software. Such a tool would permit efficient replication of useful OR in support of IMCI.

To date, no budget or work plan for this activity has been proposed.

Key Documents

WHO/CHD, *Integrated Management of Childhood Illnesses, Priorities for Operational Research*, DRAFT, May 22, 1997

WHO/CHD, *Improving Child Health, The Role of Integrated Management of Childhood Illness (IMCI)*, DRAFT, May 6, 1997

RPM, *Summary Results of Central Asia Infectious Diseases Program (CAIDP) Health Facility Survey*, Ickx, P, Moore, T, January 1997

MSH Memo RPM Contribution to the LAC Regional IMCI Initiative, July 1996

Polio Eradication

In 1994, the Americas became the first polio-free zone in the world. USAID was a key collaborator with PAHO and Rotary International in making this possible. In 1996, USAID launched an expanded Agency initiative, the USAID Polio Eradication Initiative (PEI), to wipe out polio where it still exists, particularly in Africa and Asia/Near East. USAID's goal, coinciding with that of the 1988 World Health Assembly, is to have a polio-free world by the year 2000.

The improvement of cold chain and logistics management has been recognized as crucial to sustaining routine and supplemental polio immunization systems. Logistics management of pharmaceuticals and supplies is one of the three technical areas that serve as the focus of RPM activities. MSH has had discussions with USAID about the support that RPM can provide to the PEI. To date, the following activities have been identified as areas of technical assistance where RPM can contribute to the PEI.

Activities include

- Adapt RPM needs estimation methodology to improve planning of polio vaccine needs and related commodities
- Adapt RPM pharmaceutical sector assessment methodology to include cold chain assessment and polio vaccine as part of the tracer list of products and supplies for IMCI
- Conduct rapid supply system assessments in endemic countries in conjunction with IMCI adoption
- Assess the information available to health care workers and the community to develop a standard polio information package

Outputs from these activities include

- Cold chain and polio logistics management assessment tool
- Assessment reports for endemic countries and recommendations to strengthen supply systems
- Training materials and trainers to disseminate the use of the assessment tool
- Polio vaccine information package for health care workers and consumers

No work plan or budget has been proposed for this activity

Key Documents

USAID Memo RPM Support to the Polio Eradication Initiative, March 5, 1997

MSH Memo Polio Eradication Initiative February 28, 1997

Managing Drug Supply - Second Edition (MDS-2) Training Series Materials

RPM has initiated discussions with USAID about funding a portion of the work on developing revised training materials based on the newly released second edition of *Managing Drug Supply (MDS-2)* under its cooperative agreement. The material will follow the format of previously developed and tested training materials. The first edition of *Managing Drug Supply* is the best-known and most widely used reference on pharmaceuticals' management in the world. The second edition has been thoroughly revised and updated with lessons learned from the last 15 years. The second edition is larger and more comprehensive than the first, and will likely be even more widely distributed, especially after it is translated into Spanish, French, and Russian. The goal is to have the new training materials available by June 1998.

RPM is proposing to develop basic training materials based on *MDS-2*. These materials have wide applicability in the RPM project. The Zambia country program is planning to conduct district-level training courses using this material. After translating them into Spanish, the materials will be useful for the new decentralized drug management system in the *areas* in Ecuador, as well as for the workshop planned at Hospital Eugenio Espejo in Quito. The training materials can also be applied in the planned workshops in Peru for the Project 2000 and SHIP-North projects. Trainers' and participants' guides will be available so that we can enable others to conduct trainings without RPM staff. The RPM project has already extensively used the original training materials from *MDS*, translating them into Russian and Portuguese for the Russia and Mozambique country programs, respectively. Once completed, the training materials can be disseminated to others, as needed, as well as translated into additional languages.

The budget for developing trainers' and participants' guides is estimated at \$125,674 and the time line for completing the first draft of the manuals is December 1997.

Key Documents

MSH Memo Managing Drug Supply Training Series (2nd edition) April 11, 1997

Antimicrobial Resistance

Antimicrobial resistance is a worldwide problem. The problem has been cited as a concern in child survival programs in relation to pneumonia, in tuberculosis (TB) and HIV/AIDS control programs and the threat of multi-drug resistant (MDR) TB, and in reproductive health in relation to STDs. All of these health issues have a common need to address the problems of antimicrobial resistance.

Antimicrobials are costly and are frequently overused. Antimicrobials have precise indications where epidemiological and/or laboratory evidence suggest a bacterial infectious agent. In the absence of this evidence, use of antimicrobials is not only ineffective and a waste of resources, but it can also result in resistance. Antimicrobial resistance of common infections has rendered formerly useful drugs ineffective. This is especially serious when national capacity for laboratory monitoring of antimicrobial sensitivity is limited or nonexistent.

In many developing countries antibiotic use in the community through self-medication, or prescribing by drug sellers, may contribute more to the development of antimicrobial resistance than inappropriate prescribing by physicians and other health workers in public sector facilities. In developing countries a larger share of antibiotic consumption occurs outside of organized health care delivery services.

Understanding local practitioner prescribing behaviors is critical to designing an effective intervention tool to address inappropriate antibiotic drug selection and use. As mentioned in the section on IMCI, an operations research assessment of prescribing behaviors for country-specific diseases identified as those with a high probability of antibiotic prescribing can provide important data needed to design an intervention. RPM would propose the same type of IMCI activity to address antimicrobial resistance. The data gathered could then be used to develop pharmaceutical policy, training, and information dissemination strategies.

The International Network for Rational Use of Drugs (INRUD) has also had preliminary discussions to contribute to the Emerging and Re-emerging Infectious Diseases (ERID) initiative through research on the efficacy of community-oriented strategies to reduce inappropriate use and potentially reduce the risk of bacterial resistance to essential antibiotics. INRUD can also serve an advocacy role to promote more appropriate use of antimicrobials.

No workplan or budget has been proposed for this activity.

Key Documents

USAID-Supported Activities on Control of Priority Bacterial Diseases with Increasing Antibiotic Resistance (Surveillance, Laboratory & Clinical Research, Control), DRAFT, December 19, 1996

USAID Memo Goldberger Inter-Agency Antibiotic Resistance Plan, December 13, 1996

MSH Memo Role of INRUD in USAID's Emerging and Re-emerging Infectious Diseases Initiative December 13, 1996

HIV/AIDS

Currently over 60% of hospital beds in Africa are occupied by persons with HIV-related disease, tuberculosis rates have increased dramatically, childhood mortality has doubled, and by 2010, AIDS will have orphaned over 40 million children. Statistics are equally alarming for Asia/Near East.

Traditionally, USAID's response to the epidemic has focused on three effective approaches: reducing the prevalence of other sexually transmitted infections, increasing the distribution of condoms, and altering high risk sexual behavior through behavior change communication. In addition to continuing these three major intervention strategies, an expanded response to include selected basic care and psychosocial support for HIV-infected individuals and their survivors will be included.

The global response to AIDS requires that many more USAID service organizations become involved in the fight against the AIDS pandemic. Resources have decreased in recent years so there is a need to identify areas to reduce costs and receive greater cost-effectiveness of funding allocations. RPM technical staff have had discussions with USAID about RPM support for HIV/AIDS activities. RPM's technical expertise could provide assistance in such areas as essential drug list decision making, cost-effectiveness issues and examining drugs of choice for selected opportunistic infections, antimicrobial resistance, and drug availability problems.

No workplan or budget has been proposed for this activity.

Key Documents

PPC Sector Review, Population, Health and Nutrition Sector, DRAFT, May 1997

MSH Memo Background Information on HIV/AIDS (Global), May 1997

IV MODES OF IMPLEMENTATION

A Summary

The project design calls for RPM to work through seven modes of implementation. They are

- Assessments of the Pharmaceutical Sector
- Policy Analysis and Dialogue
- Training
- Improved Information Management
- Studies and Operations Research
- Communications and Social Marketing
- Collaboration with Other USAID Projects and Other Donors

To-date, RPM has worked in all of these modes, though some have emerged as more prominent than others. The purpose of this section is to provide summaries of where and when RPM has carried out these key activities. The information presented in the tables that follow is taken from the Program Descriptions in the section above.

B Assessments of the Pharmaceutical Sector

The development of an indicator-based approach to assessment of pharmaceutical sector operations has been a major thrust of RPM's work. In fact, working in collaboration with USAID's LAC/Health and Nutrition Sustainability Project, the MSH Drug Management Program had begun work on indicator-based assessment methods prior to RPM's inception. The results of that work were a draft manual and field tests of the approach in Guatemala and Ecuador. Subsequently, under RPM, project staff have

- Finished the manual, which is now entitled *Rapid Pharmaceutical Assessment: An Indicator-Based Approach*,
- Carried out the project's mandated country assessments, and
- Moved on to develop specialized assessment tools, based on the original document, but then tailored to meet the needs of specific groups of clients.

The approach presented in the manual involves collecting and processing both quantitative and qualitative data sufficient for deriving 46 indicators of performance in eight areas of pharmaceutical management operations:

- Policy, Legislation, and Regulation
- Formulary/Essential Drug Lists and Drug Information
- Ministry of Health Pharmaceutical Budget and Finance
- Ministry of Health Pharmaceutical Procurement
- Ministry of Health Pharmaceutical Logistics
- Patient Access and Drug Utilization
- Product Quality Assurance
- Private Sector Pharmaceutical Activity

The information gathered and analyzed has a range of applications, including

- Verification of operational strengths and weaknesses
- Design of interventions for improvement
- Definition of pharmaceutical system resource requirements
- Identification of alternative approaches to management
- Comparison of the performances of different systems, programs, or countries

During RPM's country assessment phase, staff and counterparts completed seven assessments, of which five (Ghana, Mozambique, Ecuador, El Salvador, and the Eastern Caribbean) were indicator-based, and two (Nepal and Ukraine) were not indicator based. The reason for diverging from the indicator-based approach in Nepal and Ukraine had to do with the circumstances in which they were carried out. In the case of Nepal, RPM was collaborating with another donor and it seemed best to follow their scope of work. In the case of Ukraine, there were difficulties in obtaining authorization for collecting the required data.

As RPM has evolved and the numbers of country programs and activities have increased, it has become apparent that, apart from the information gathered, the project's approach to assessment has had a number of important positive consequences. These include

- Among counterparts, the notion of capacitating local staff to collect and analyze data on performance of the systems they manage has been very appealing. A typical response might be paraphrased "We've known that these problems exist, but until now we haven't known how to describe them."
- Jointly sponsored assessments are a good way to engender donor collaboration within a given country arena. Assessments have a number of discrete cost components, so they provide a way for different agencies to participate in a common effort, each providing the inputs that are most suitable to their situations. Thus one donor might provide the technical assistance, another will agree to cover local costs such as training, per diems and transport for data collectors, and a third might sponsor a workshop for presentation of results.

Donors who provide drugs have an obvious interest in assessing management capacity for expensive commodities. But donors who support health worker trainers may be just as interested because availability of drugs at health facilities is crucial to the success of their efforts.

- Summing up the two preceding points, we have learned that assessments are an excellent means of bringing about collaboration in a common effort and creating a sense of "stake holding" among various groups concerned with improving drug management.
- Another lesson learned is that indicator-based assessment can be applied in different ways to address the general need for evaluation. RPM has used assessments in at least three ways, including
 - ▶ Overall country assessment, covering the eight topics of pharmaceutical system operations, listed above. This provides a valuable overview and helps to place specific operations or problems in a well described context.
 - ▶ Focused assessments, that is, in-depth analysis of the operations of a specific operation or problem. Such assessments might focus on one institution, such as a poorly functioning central medical store. Or they might focus on a particular problem, such as drug cost recovery.

- ▶ Specialized applications, intended for routine use by local managers. Such tools focus on specific system operations and use only a subset of the overall list of indicators. RPM is experiencing significant demand for such specialized assessment tools, including self assessments focusing on drug management at the district level and assessments supporting implementation of a specific program such as Integrated Management of Childhood Illness or IMCI.

Table Five summarizes the assessment activities that RPM has carried out, or which are in process.

Interaction with the MSH Drug Management Program

As noted above, the DMP was involved in development of indicator-based assessment tools prior to RPM's inception. The very first step was development of country assessment protocols under the USAID bilateral Eastern Caribbean Regional Pharmaceuticals Management Project. Building on this experience, the DMP developed the prototype indicator-based tool under the LAC/HNS Project. Then came the standard tool developed under RPM. The DMP has now expanded on the RPM assessment methods to develop an expanded set of structured survey instruments covering both public and private pharmaceutical sectors, these instruments are tailored to the needs of each new assessment. The most recent non-RPM adaptation was an assessment of drug supply systems for the social security (IMSS) system in Mexico. The DMP instruments are now being adapted for two large-scale assessments scheduled for the summer of 1997 in Nigeria (focus on private pharmaceutical sector capacity) and Vietnam (looking at 120 commune cost recovery programs). These revised survey instruments will in turn be revised and adapted for use in future RPM assessment activities.

Table Five RPM Assessment Activities

PROGRAM	DATE	TYPE	CONTENT
Guatemala	8/92	Country-wide	Pre-RPM field test of the original assessment tool Covered 8 topics with 33 indicators
Ecuador	12/92	Country-wide	Pre-RPM field test of the original assessment tool Covered 8 topics with 33 indicators
	11/94	Focused	Evaluation of public sector logistics systems, with special focus on CEMEIM, the parastatal drug procurement and distribution agency
	11/95	Specialized	Tool developed for use by district level staff to use in design of decentralized district level drug management system Covered eight topics with 36 indicators
	3/97	Specialized	Implementation of the new decentralized drug management system in Imbabura province Covered eight topics with 36 indicators
Ghana	8/93	Focused	Although country-wide indicators were collected, there was also a special focus on opportunities for private sector involvement in procurement, distribution, and sales Covered eight topics with 40 indicators
El Salvador	11/93	Country-wide	Covered the Ministry of Health, Social Security Agency and Family Planning Association Covered 8 topics and 33 indicators
Nepal	12/93	Country-wide	Carried out in collaboration with WHO DAP for purposes of evaluating the Essential Drug Program Did not use the RPM manual, but data on 23 indicators were collected
	5/97	Specialized	Tool developed for use in assessing drug management at the district level Has been applied in two districts to gather and interpret data for presentation at a national workshop The objective is to develop a package of interventions for improving logistics and rational use at the district level Has 25 indicators
Eastern Caribbean	1/94	Country-wide	Covered Dominica, Grenada, Montserrat, St Kitts & Nevis, St Lucia, St Vincent & the Grenadines Covered eight topics with 32 indicators
Mozambique	1/94	Country-wide	Covered eight topics and 38 indicators

PROGRAM	DATE	TYPE	CONTENT
Ukraine	1/94	Focused	Carried out in collaboration with the World Bank Focused on the operations of the <i>farmatsiya</i> , or state run procurement and distribution agency for the city of Kiev Due to the difficulty of collecting data, this assessment was not indicator-based
Zambia	Current	Specialized	Due to the abundance of recent evaluations of pharmaceutical sector operations, an RPM country-wide assessment was not required RPM is assisting with the development of a self assessment tool for district level managers to use to evaluate and strengthen local-level operations This tool is still under development and has 36 indicators
IMCI	Current	Specialized	Following discussions with BASICS, PAHO and WHO/CHD, RPM expects to develop a tool that managers may use to evaluate the status of drug management as it affects implementation of IMCI programs Work is just getting under way, but it assumed that the tool will have two parts One for indicator-based assessment of procurement and distribution, and another for quantitative analysis of prescribing practices The second part will use PASS, RPM's prescription analysis software
Bangladesh	Late 97	Specialized	RPM will collaborate with local NGOs to develop a tool to evaluate drug cost recovery operations This will incorporate indicators from the existing manual for topics such as procurement and distribution, plus new indicators to be developed for financial management

C Policy Analysis and Dialogue

RPM's overarching goal is to contribute to improved allocation and use of financial, human, and information resources within the health sector Inducing host countries and donors to support the significant changes required for achieving this goal means that there must take place (1) re-examination of basic assumptions, and (2) proposal of alternatives to existing ways of doing business

Not every activity undertaken by RPM has policy implications, much of our work seeks to make existing systems function better than they do On a number of occasions, however, RPM has been presented with opportunities to influence policies that affect or are affected by drug management practices

A summary of such opportunities is given in Table Six, below

Interaction with the MSH Drug Management Program

The technical positions advocated by RPM in policy dialogues are established through extensive discussion between both RPM and non-RPM members of the DMP staff. Outside of RPM, DMP has played a strong role in policy dialogue and reform in several countries in recent years. During the life of the RPM Project, notable examples have included DMP work advising policy makers in Mexico (supply system structure, drug and supply selection policy, transport policy), Nicaragua (generic drug policy, pricing policy and supply system structure), Senegal (supply system structure), Cambodia (decentralization), and South Africa (training policy and supervisory structure).

DMP staff members have played a leading role in many important workshops and seminars on pharmaceutical policy, including World Bank and WHO meetings on the comparative role of public and private pharmaceutical sectors. DMP presented policy papers and chaired sessions at major policy conferences such as the International Conference on Improving Use of Medicines, Chiang Mai, Thailand (April 1997) and the International Conference on National Medicinal Drug Policies, Sydney, Australia (October 1995). Of course the original 1981 DMP textbook *Managing Drug Supply* had some impact on drug policy deliberations over the years, and it is expected that the new edition of the book, revised in collaboration with WHO and published in April 1997, will have even more impact in the future, particularly in light of the broad base of well known contributors and new edition's focus on policy issues.

Table Six Opportunities for Policy Dialogue

PROGRAM	DATES	CONTENT
Ecuador	1994-5	<p>Privatization of Drug Logistics and Distribution Services At the time that RPM conducted the focused assessment of CEMEIM, the parastatal drug procurement and distribution agency, the Ministry of Health was frankly recognizing CEMEIM's financial and operational deficiencies and had requested assistance in identifying alternatives for improvement. RPM proposed a restructuring that would transform CEMEIM into an autonomous procurement agency. The new agency would implement a transparent competitive procurement process, and would rely on the commercial sector for direct delivery of product to health facilities. Acting on these recommendations would have meant significant reform of policies concerning procurement integrity, fiscal management and relations with the private sector. Following a change of government in 1995, the Ministry lost interest in reforming CEMEIM.</p>

PROGRAM	DATES	CONTENT
Ecuador	1995-Present	<p>Decentralization of Drug Management Operations After the new MOH officials took office in August 1995, their efforts were directed with new force towards decentralization of the health system. In a departure from the central procurement activities RPM had been asked to undertake, senior staff in the <i>MOH Direccion de Control Sanitario y Farmacoterapeutica</i> asked for assistance with its decentralization plans, as envisioned in the 1991 <i>SINAFIA</i> (National System of Pharmacotherapeutics) decree. RPM responded by assisting the MOH to define the new roles of the central, provincial, and <i>area</i> levels and the management requirements for an efficient and decentralized drug management system. RPM facilitated the involvement of donors and staff at all levels, and of staff in the eight pilot <i>areas</i> supported by FASBASE (World Bank-funded project) in a series of active meetings and workshops for the discussion and design of the new system. The findings of the indicator-based self-assessment conducted in November 1995 proved to be invaluable for informing this policy dialogue. The product of these discussions is the document entitled "<i>Guia del Sistema Descentralizado para el Manejo de Medicamentos en Areas de Salud del Ecuador</i>" (<i>Guide for Decentralized Drug Management in Health Areas of Ecuador</i>).</p>
Nepal	1995-96	<p>Design and Implementation of Drug Cost Recovery Programs In Nepal, 80% of the public sector drug supply is financed by donors. Through arrangements with Nippon Foundation, KfW and UNICEF, the Ministry of Health agreed to undertake a very large scale drug cost recovery program. This activity was launched in 1994, but by a year later, not even a feasibility study had been produced, and at the same time, drugs intended for sale were beginning to arrive. At UNICEF's request, RPM carried out a quantitative evaluation of existing drug cost recovery activities, as a means of improving the quality of planning. The principal finding was that existing operations, principally those run by NGOs, had achieved important successes, though they also had certain deficiencies.</p> <p>Following analysis of budgetary trends, RPM concluded that the best means for reducing donor dependence was to implement drug cost recovery as proposed, and recommended an approach wherein the MOH worked with the experienced NGOs as the most efficient means for achieving large scale coverage.</p>

PROGRAM	DATES	CONTENT
Zambia	Current	<p>Restructuring the Central Medical Store and Decentralization of Drug Management Operations With assistance from the World Bank, DANIDA, SIDA, and USAID, the Ministry of Health is in the midst of an ambitious reform effort. Important thrusts include integration of health services, decentralization of planning and decision making, and fiscal reform aimed at promoting financial sustainability. Recently RPM began playing a role in the process. RPM contributed a member to an international team that evaluated options for restructuring Medical Stores Limited (MSL), the financially failing parastatal drug procurement and distribution agency. The basic recommendation of the team, now under consideration by the Ministry, was to restructure MSL as an autonomous agency, capitalized by an independent trust, and operated along commercial lines.</p> <p>As part of its contribution to this dialogue, RPM also worked to call attention to the need to improve drug management at the district and facility level. The underlying concern is that, in the wake of decentralization, a restructured MSL would ultimately have to rely on the independent district and hospital boards as its primary clients. And yet the boards are demonstrably unprepared for such responsibilities as quantifying needs and managing budgets. Descending from the policy to the practical level, RPM has taken the lead in developing an approach to improving drug management at the district level. The primary means will be a package consisting of a self assessment tool for diagnosis of problems and a manual presenting solutions for overcoming the most typical deficiencies. This product is currently being developed and tested.</p>

PROGRAM	DATES	CONTENT
Reproductive Health	Under Way	<p> Estimating the Cost of Supplying Reproductive Health Commodities The recommendations of the International Conference on Population and Development (UN, Cairo, September 1994) included the need for expanding the coverage and improving the quality of reproductive health (RH) services USAID is concerned about the cost implications that these recommendations will have The agency turned to RPM for assistance in developing an approach to estimating commodity costs, which are an important component of overall costs As a first step, RPM collaborated with the MotherCare II Project to define a list of 25 RH problems to serve as the basis for further work </p> <p> RPM followed up by initiating a four-stage process to identify and estimate the cost implications of supplying RH commodities in the context of these 25 problems, and of the recommendations of the Cairo Conference In the first two stages, RPM assisted USAID to identify the cost implications and underlying assumptions of global RH policies within the framework of country-specific health care delivery and supply systems In the next two stages, RPM will measure the actual cost implications that RH policies have for selected countries The objective of this work is to provide USAID and other donors with a valid approach for estimating RH drug costs, so that planning for program expansion may be done realistically </p>

PROGRAM	DATES	CONTENT
<p>REDSO Eastern and Southern Africa</p>	<p>Just Starting</p>	<p>REDSO Regional Logistics Initiative REDSO has a portfolio of “networking” activities intended to promote inter-regional collaboration on important themes, including quality of care, health financing and adolescent health. The networking takes place through identification and promotion of “best practices,” workshops for sharing experience on problems and solutions, development of work plans, and other activities intended to facilitate cross-border exchange, such as observation tours and making staff from one country with demonstrated success available to assist in other countries.</p> <p>REDSO intends to launch a networking activity for logistics management, and RPM has suggested that an appropriate focus would be the “logistics consequences” of health sector reform. Such reforms, sponsored by the World Bank and various bilateral donors are now taking place in a number of countries in the region. There appear to be certain common developments such as financial restructuring of central medical stores, integration of health services and decentralization of financial management and decision making. These developments bring along consequences for logistics management, both intended and unintended. RPM feels that a policy dialogue on these consequences would be useful in the sense that countries that are further advanced in the reform activities should have “lessons learned” that would be of tangible benefit to countries just beginning the process.</p>
<p>IMCI</p>	<p>Current</p>	<p>Drug Management in Support of IMCI Through dialogue with BASICS and more recently with WHO/CHD, RPM has been advocating that, in planning and preparation for implementation of IMCI programs, greater emphasis should be placed on the importance of drug management. In Central Asia, RPM conducted quantitative analysis of prescribing practices for ARI and diarrhea that empirically demonstrated the financial savings to be had from following the IMCI norms of treatment. Based on these results, BASICS has now decided to incorporate prescribing analysis into its health facility quality assessment surveys. As noted above, RPM also expects to develop a specialized assessment tool for evaluating both logistics and prescribing practices for use by local IMCI program managers. The possibility has been discussed that this product might be field tested by PAHO and WHO-Afro.</p> <p>In this case, the policy dialogue has been so far between RPM and certain donors, for the purpose of ensuring that early and appropriate attention is paid to drug management ahead of introducing a major new health worker training initiative.</p>

D Training

MSH has been a leader in training for drug management since 1981. In consequence, it is natural that training has figured prominently in most RPM programs. Lessons learned in RPM training activities have been incorporated in the recently published second edition of *Managing Drug Supply*, and RPM will play a primary role in developing a new generation of training materials based on this new book.

There has emerged a mutually reinforcing relationship between assessment and training activities. As local managers have shown interest in RPM's approach to indicator-based assessment, there has been demand for training local staff to apply these methods. This in turn has led to training in specific topics of drug management, as locally based assessment activities have called attention to specific problems. This process has played out in both Ecuador and Zambia, and now appears to be getting under way in Nepal.

RPM's training activities have included adapting pre-existing training materials to country situations, creation of new training materials based on local needs, training of trainers, and training of line staff.

Table Seven provides a summary of these activities.

Interaction with the MSH Drug Management Program

As one of the world leaders in drug management training, DMP has undertaken a number of important training activities beyond those funded by RPM during the past four years. Through INRUD, DMP staff assisted in providing rational drug use training in such non RPM countries as the Philippines, Thailand, Indonesia, Tanzania, Zimbabwe, Uganda, Ghana, and Nigeria. DMP has developed a partnership with the International Dispensary Association (IDA) to offer an annual drug management course in Amsterdam. In collaboration with BASICS and the WHO Child Health Division, the DMP developed a manual and training materials for drug management at first level health facilities, which was tested and refined in South Africa. This material has directly influenced RPM's work on drug management at local levels in Ecuador, Zambia, and Nepal. As noted above and elsewhere in the briefing book, DMP will work through RPM to develop a new generation of drug management training materials based on the new edition of *Managing Drug Supply*. This activity will proceed in partnership with the WHO Action Programme on Essential Drugs, along with pharmacy schools in the US, UK, Kenya, Indonesia, and South Africa.

Table Seven Summary of Training Activities

PROGRAM	DATES	PARTICIPANTS	CONTENT
Tools' Development	9/95	33	Rapid Assessment of Pharmaceutical Management RPM translated its <i>Rapid Pharmaceutical Management Assessment: An Indicator-Based Approach</i> manual into Spanish and held a workshop for participants from nine countries plus PAHO staff in Santa Cruz, Bolivia.

PROGRAM	DATES	PARTICIPANTS	CONTENT
Ecuador	10/95	24	Rapid Assessment of Pharmaceutical Management Systems Using materials developed for the Bolivia workshop, MOH staff were trained in this approach as part of an effort to assist the <i>Direccion de Control Sanitario y Farmacoterapeutica</i> to decentralize drug management and improve <i>area</i> level drug supply
	3/96	8	Training of Trainers in the Rapid Assessment Approach MOH staff trained to train others as part of preparation for expansion of activities to strengthen drug management at the health <i>area</i> (district) level
	6/96	45	Decentralized Drug Management for Health Areas Training in store keeping, inventory control, needs quantification, cost recovery, and procurement for staff in eight health <i>areas</i>
	9/96	25	Hospital Drug Needs Workshop Improvement of drug selection and introduction of the formulary concept at a national referral hospital
	11/96	30	Structure and Function of the Health Area Management Unit The objective of this activity was to strengthen the capacity of new health <i>area</i> managers RPM and Belgian Foreign Aid carried out this activity, and made use of the model developed by this donor
	12/96	30	Guidelines for Decentralized Drug Management Health <i>area</i> managers were trained to implement the new decentralized drug management model developed by RPM
	5/97	27	Scabies in School Children Rational Drug Use and Information This is the first topic in a school-based communication strategy developed in collaboration with IMCI/BASICS
Eastern Caribbean	3/95	26	Report Writer for INVEC-2 Advanced functions of Report Writer for use in creating reports in addition to those supplied automatically by INVEC-2 CMS and MOH staff from ten islands were trained, along with ECDS staff

PROGRAM	DATES	PARTICIPANTS	CONTENT
Mozambique	95-97	120	Drug Management and Rational Use Pre-existing materials adapted and translated into Portuguese for training of MOH staff at central, provincial, and local levels This activity is viewed by MOH as part of an overall human resource development strategy
	8/95	11	Training of Trainers for Drug Management and Rational Use Following the first presentation of the "Drug Management and Rational Use" course, MOH staff were trained to repeat the course Over time they have developed capacity to present it with little or no outside support
	5/97	10	Drug Utilization Review Training of Hospital staff in DUR methods This is viewed as a preparatory step to a broader program for promoting rational use, now in the planning stage
Nepal	94/95	4	Procurement Information Management System MOH central staff trained to maintain supplier and product information on specially developed software Activity not ongoing because of low counterpart interest
	12/95	4	Survey Design and Data Collection Methods As part of drug cost-sharing study, staff from local NGO trained in survey design and data collection methods for drug management
	95 on	6	Drug Information Center Operations This activity carried out by USP and involves ongoing training of staff from the four organizations making up the Drug Information Network of Nepal Training covers routines for operating a Drug Information Center Most visible item is training to operate the CD ROM version of USP Drug Information database USP brought five participants to its Washington HQ as part of this ongoing effort

PROGRAM	DATES	PARTICIPANTS	CONTENT
	3/97	6	Rapid Assessment of Pharmaceutical Management Systems MOH, RPM, and GTZ are collaborating in a pilot activity for strengthening drug management at the district level RPM worked with MOH and INRUD staff to create a specialized assessment tool based on the RPM approach Data have been collected in two districts and will be presented at a National Workshop in June 1997
	Ongoing	N/A	Strengthening Logistics Management at the District and Facility Level Extensive training is being carried out by JSI for cleaning out and organizing storage facilities at the local level and for implementation of routine reporting of consumption and balances RPM has not been responsible for carrying out this training, but RPM did contribute significantly to development of methods and materials when the activity was in the planning stage
	Ongoing	N/A	Development of Revised Standard Drug Treatment Schedule RPM is working with MOH and the Institute of Medicine's Health Learning Materials Center to develop this document, which will be tested and published in English and Nepali When available, it will be used in training activities and communications activities for promotion of rational drug use
Central Asia	12/96	6	Simulated Purchase Survey Methods MOH staff in Kazakhstan trained to carry out simulated purchases to measure drug sellers' treatment practices for diarrhea and ARI
Zambia	Planned	300	Rapid Assessment and Problem Solving for Pharmaceutical Management RPM is collaborating in the development of a specialized tool for upgrading management of drugs, contraceptives and lab supplies at the district level Following field testing and revision, it is expected that regionally organized training will take place for staff from all 78 health districts

PROGRAM	DATES	PARTICIPANTS	CONTENT
Poland	Planned	4	Hospital Formulary Development and Drug Utilization Review RPM expects to sponsor training on these topics to be carried out at the University of Arizona RPM will participate in the training and especially in the formulation of a work plan to be implemented in Poland, following completion of the tour This activity fits into the Strengthening Local Governments in Health Program being implemented by the USAID Data for Decision Making Project

E Studies and Operations Research

RPM has been active in operations research at both the country and central program level Arguably, RPM's work with assessments qualifies in many cases as OR Since the assessments have been covered in a preceding sub-section, they will not be discussed again in detail, except to note the following RPM's work with assessments and the stress placed on transferring the rapid assessment technology to counterparts represents a significant effort to create country-based OR capacity

RPM believes that involving local managers as much as possible in quantitative measurement of the performance of their own pharmaceutical systems is an essential step in institutionalizing improved methods of management Direct involvement in assessments gives managers clear and specific appreciations of strengths and weaknesses and engages them as stake holders in interventions for change

Apart from the assessments, RPM has carried out, or is planning to carry out, a number of important studies, and they are summarized in Table Eight Reviews, concept papers, and other "desk top" items are not included in this listing

Interaction with the MSH Drug Management Program

Much of DMP's work outside RPM involves operations research on various aspects of drug supply systems, often in the form of the pharmaceutical sector assessments that were discussed above RPM and non-RPM research activities learn from and build on each other For example, the upcoming DMP research on cost recovery in Vietnam draws on the RPM studies in Nepal and Ghana (as well as on pre-RPM DMP work in Ecuador) As part of INRUD network coordination, DMP helps core groups in ten countries design and manage operations research aimed at identifying drug use patterns, ascertaining reasons for misuse, and testing interventions to change provider and consumer behavior In addition to the major pharmaceutical sector assessments cited above, recent DMP operations research activities include studies of medical supply utilization in Mexico, generic drug use in Nicaragua, EDP procurement activities in Nigeria, drug utilization in Florida Medicaid, and medical stores operations in Senegal and Sierra Leone

Table Eight Major Studies Carried Out By RPM

PROGRAM	DATES	STATUS	CONTENT
Ecuador	11/96	Completed	<p><i>Sistema de Suministro de Medicamentos en El Ecuador Evaluacion y Propuesta de Reforma</i> Though carried out as part of a country assessment, this study is listed here because it focused heavily on management practices at CEMEIM, the parastatal drug procurement and distribution agency. Evaluation of financial, procurement, inventory, and personnel management systems found them to be weak. The study recommended restructuring CEMEIM as an autonomous agency, with financial management and procurement to be handled by staff engaged through a private foundation. The study also recommended that greater efficiency in distribution could be achieved through direct delivery by commercial suppliers, in place of storage and transport services provided by CEMEIM.</p>
	7/97	Planned	<p><i>Study of Retailers' Dispensing Behavior in Cases of ARI and Diarrheal Disease (DD) in Ibarra.</i> Simulated purchase survey and quantitative assessment of retailers' dispensing behavior for IMCI drugs in Imbabura province. The findings will be used to develop a training and pharmacy accreditation program for retailers in Ibarra.</p>

PROGRAM	DATES	STATUS	CONTENT
Nepal	8/95	Completed	<p><i>Intervention Test of Training and Supervision of Dispensing Activities, Intervention Test of Training and Supervision on Prescribing Activities, and Baseline Assessment of Consumer Drug Use</i> The first two studies were carried out for the purpose of gaining practical experience with work to promote rational drug use within the MOH services delivery system They were not intended as definitive baselines, rather they were viewed as opportunities to test the feasibility of working at the district level The INRUD Nepal Core Group carried out all three of these studies The studies were conducted in nine Terai districts, including an intervention-one group, an intervention-two group and a control group Each group comprised 21 health facilities Baseline and follow up measures were taken by observation in each group, using WHO indicators The objective of the dispensing study was to evaluate the impact on dispensing practices of two interventions, that is, training only and training plus monitoring and supervision The results suggested modest improvements in knowledge and practice of dispensers as result of the interventions</p> <p>The objective of the prescribing study was to evaluate the impact on prescribing practices of two interventions, that is training only and monitoring and supervision only The intervention for training only was not carried out, as the training was to have been carried out by UNICEF and did not take place For the monitoring and supervision intervention, there was improvement in some prescribing practices, especially with respect to conformity to the Standard Drug Treatment Schedule Results for knowledge of correct treatments showed no consistent trend toward improvement</p>

PROGRAM	DATES	STATUS	CONTENT
			<p>The consumer drug use study had several objectives, among which were clarifying knowledge and practices (KAP) towards common health problems and use of drugs, exploring attitudes towards use of public and private sector health facilities, and determining the most commonly stocked drugs in households. The district sample was the same as for the prescribing and dispensing studies. The study team collected data from 900 households and conducted nine focus group discussions. The report presents considerable tabulation of findings, but among the more interesting are the following: Most households thought ORS was useful, but only 30% understood the concept of dehydration, about 75% of households thought that vitamin tonics were useful, about 40% of households stocked antibiotic drugs, but few understood correct use, belief in the superior efficacy of injectable drugs was high, for common problems, more households reported use of private rather than public sector health services, and non-availability of drugs was a commonly cited source of dissatisfaction with service at sub-health posts.</p>
	9/95	Completed	<p><i>Nepal Ministry of Health Pharmaceutical Supply Directory</i>. This study provided for perhaps the first time, a systematic inventory of all drug inputs to the MOH system, except hospitals. For 1994, it examined procurements by MOH programs and donors, listed all products provided, including quantities and prices, summarized for each source the annual planning, procurement, and distribution cycle, and performed ABC analysis to clarify funding trends and product-specific spending patterns. The study revealed that about 80% of the non-hospital drug supply is provided by donors.</p>

PROGRAM	DATES	STATUS	CONTENT
	6/96	Completed	<p><i>Nepal Cost-Sharing in Pharmaceutical Distribution</i> The study began with an evaluation of drug financing and budgetary trends and concluded that MOH was heavily dependent on donors for its drug supply, and there was little chance of achieving self sufficiency through increases in government funding The study then evaluated the performance of three ongoing drug cost sharing activities, including two operated by NGOs and one sponsored by the MOH and WHO Using indicators of drug availability and levels of cost recovery, it found that each program examined had some successful results, but none had developed an approach that met all needs The study concluded that drug cost-sharing programs were a viable means of reducing donor dependency and recommended partnerships between MOH and experienced NGOs as the most efficient means of achieving large scale coverage</p>
Central Asia	12/96	Completed	<p><i>RPM Central Asia Infectious Diseases Program Health Facilities Survey and RPM Simulated Purchase Survey, Almaty, Kazakhstan</i> These studies analyzed for diarrhea and ARI drug prescribing practices in health facilities and sales practices in retail pharmacies There were a number of important findings, including prevailing prescribing practices were often inappropriate in terms of excessive use of antibiotics and antidiarrheal drugs They were also significantly more expensive than IMCI norms of treatment Not surprisingly, drug sellers often made clinically inappropriate recommendations that were also more costly than IMCI norms</p>
Reproductive Health	Upcoming	Planned	<p><i>Estimating the Cost of Reproductive Health Commodities</i> After a desktop trial of the costing approach, RPM is working on the design of a standard method of applying country-specific data for estimating the cost of supplying commodities for 25 selected RH problems and services This costing approach seeks to quantify the pharmaceutical cost implications of implementing or improving existing RH services, for achieving country-specific RH goals</p>

PROGRAM	DATES	STATUS	CONTENT
IMCI	Upcoming	Planned	Drug Management for IMCI As noted, RPM will collaborate with BASICS to create a special drug management assessment package for IMCI. Field testing and eventual application will provide information similar to that described just above for Central Asia for a number of countries.

F Communications and Social Marketing

RPM's work in training, which is an important form of "communication," has been summarized above. Apart from training, however, it is fair to say that this is the mode of implementation that RPM has so far used the least. There are some important examples, however, and these include:

- In Nepal, RPM is working with a local NGO, the Resource Center for Primary Health Care, to support the publication of a drug information bulletin in the newsletter *Bhalakusari*. This publication is aimed at the community level and has a circulation of 7000.
- The work being carried out by USP on establishment of drug information centers in Nepal and Mozambique is also an important communications activity. The availability of up-to-date and unbiased drug information is a prerequisite for institutionalizing communication activities aimed at improving rational drug use.
- In Nepal, Mozambique, and Zambia, and through IMCI-related activities, RPM expects to intensify its efforts for promoting rational drug use. In the final analysis, improving drug use is a matter of communicating to promote better prescribing decisions. Training activities in support of RDU have already been noted, and as these activities mature, it is expected that approaches to monitoring and supervision will also be developed and tested. This should lead to a well rounded package of communications interventions.
- In Ecuador, RPM is collaborating with BASICS to launch a school-based activity for communicating about the IMCI health problems, and this will include messages about appropriate drug use. RPM and BASICS are working with school teachers to design appropriate teaching curricula and methods for school children to become the family information agents in rational drug use.

Interaction with the MSH Drug Management Program

Within DMP, the main focus of communications activities has been a three-year effort to produce the new second edition of *Managing Drug Supply*, as already noted, this new textbook draws broadly on RPM experiences and insights in many of the chapters. Another major focus of DMP work in communications/social marketing is promoting rational drug use. In collaboration with WHO, the DMP produced the *Guide for Improving Diarrhoea Treatment Practices of Pharmacists and Licensed Drug Sellers*. Its major influence on RPM has been the inclusion of simulated purchase surveys in the Ecuador, Central Asia, and IMCI programs.

The approaches to communicating about rational drug use that RPM employs are heavily influenced by DMP work carried out through INRUD

G Improved Information Management

RPM has contributed to improved information management within the context of each of the three mandated technical areas, that is

- Automation of drug registration,
- Procurement and inventory management, and
- Drug information and rational use

Work in drug registration has been minimal, limited to facilitating the installation of WHO software in Nepal. For the other two areas, there is a long list of activities carried out. They consist of development of computer software products under the Tools' Development and Information Dissemination Program and applying these tools in different country programs. Details will be found in the relevant parts of Section III.

Table Nine below summarize the specific activities carried out

Interaction with the MSH Drug Management Program

All of the computer software developed by RPM is based on earlier products produced by the DMP. Indeed, it was because of the demand for these tools that RPM has allocated resources for upgrading and disseminating them. The RPM tools are also now applied by DMP in non-RPM countries. For example, INVEC-2 has been installed in recent years in Zimbabwe, Cambodia, Mexico, Paraguay, and Yemen. When PASS and ESTIMED are fully field tested, they will be used in INRUD studies and in various other DMP research activities such as those discussed above. Looking to the future, DMP will work with the USAID/MSH Equity project in South Africa to evaluate current computerized inventory management systems. DMP and RPM are considering the viability of developing and testing a CD ROM suite of software, incorporating Windows versions of the RPM software. Assuming that this activity goes forward as planned, it will likely entail collaboration with bilateral development projects in at least South Africa (USAID) and Zimbabwe (Danida), potentially other projects could also participate. When a new set of Windows tools is developed, it will be disseminated to both RPM and non-RPM field programs.

Table Nine Summary of Information Management Interventions

PROGRAM	DATES	STATUS	CONTENT
Tools' Development	9/92 - present	Ongoing Work	RPM has developed INVEC-2 for inventory control, ECPRO-2 for managing procurements, ESTIMED for drug needs quantification, and PASS for prescription analysis

PROGRAM	DATES	STATUS	CONTENT
Ecuador	3/96 - 3/97	Completed	Developed manual reporting system for decentralized drug management
Eastern Caribbean	5/94	Completed	Installed INVEC-2 in member countries of ECDS and ECPRO-2 at ECDS HQ
Nepal	3/94-7/94	Completed	Developed product coding system for the Logistics Management Information System At the same time, developed stock arrangement system for storage facilities, that places stock on shelves in the same order found on the reporting forms of the LMIS These outputs have been implemented on a large scale as part of the logistics system clean up effort being carried out through the USAID bilateral project (JSI)
	5/94 - 12/94	Completed	Developed PIMS or "Procurement Inventory Management System" at the MOH Logistics Management Division Though design and training completed, the system has not been used due to lack of counterpart interest
	5/94 - Present	Ongoing	Facilitated installation of SIAMED, the WHO drug registration software at the Department of Drug Administration This activity has been accompanied by an extensive cleaning of the manual record keeping system
	6/96-9/96	Ongoing	USP has installed in the sites for the Drug Information Network of Nepal, the computer program Ask Rx, which is the CD ROM of the USP Drug Information database USP is also developing a Nepal-specific version, based on the MOH Essential Drug List

PROGRAM	DATES	STATUS	CONTENT
	5/97	Ongoing	RPM has installed PASS, the prescription analysis software, at INRUD and DDA RPM will continue to work with counterparts to apply the program
Mozambique	3/96 - 3/97	Completed	As part of RPM's drug management training activities, improvements were made in the manual stock record keeping and reporting system used in health facilities
	1997	Planned	Installation of INVEC-2 in selected central and regional storage facilities
Zambia	8/96	Completed	Used tender management module of INVEC-2 to evaluate bids for a US\$6 million international drug tender for the Department of Pharmaceutical Services
	1997	Just Beginning	The central medical store has requested that RPM install INVEC-2, and a pre-installation assessment has begun
Central Asia	11/96 - 1/97	Completed	PASS, the prescription analysis software, was used for evaluation of prescribing for diarrhea and ARI in Kazakhstan, Uzbekistan and Kyrgyzstan
Reproductive Health	1997	Just Beginning	ESTIMED will be used to quantify drug needs as part of the reproductive health cost study
IMCI	1997	Just Beginning	PASS will be used as part of the specialized "Drug Management for IMCI" assessment tool that will be developed

H Collaboration with Other USAID Projects and Other Donors

RPM is particularly proud of its record as a project that actively seeks opportunities to collaborate. We believe that the project's openness to working with others is a major contributing factor to increases in demand for RPM's services at both the country and central levels.

A program by program summary of collaborative activities is given in Table Ten

Interaction with the MSH Drug Management Program

Like RPM, the DMP collaborates extensively with other USAID projects and other donors. Section VI of this briefing book, entitled "Cost-Sharing," contains a long list of DMP collaborative activities.

Table Ten RPM's Collaborations with Other USAID Projects and Other Donors

PROGRAM	COLLABORATIVE ACTIVITIES
Tools' Development	<p>The RPM approach to indicator-based assessment was originally developed through work funded by the USAID LAC/Health and Nutrition Sustainability Project</p> <p>INVEC-2 was developed with technical input from the Zimbabwe Essential Drugs Action Programme, funded by DANIDA</p> <p>USAID has urged that RPM's and the WHO DAP approaches to indicator-based assessment be harmonized. No particular progress has been made, but RPM is prepared to work on this if a decision is made to go forward.</p>
Ecuador	<p>RPM has worked with a number of other donors on the decentralized drug management activity to coordinate TA inputs and share local costs, including the World Bank, UNICEF, PAHO and Belgium Foreign Aid</p> <p>RPM is working with BASICS to develop approaches to IMCI</p> <p>RPM is working with USAID-Partnership for Health Reform Project and CEPAR, a local NGO to develop local drug policy at the municipal and provincial level. This is part of the decentralization efforts to strengthen local authority and capacity.</p>
Eastern Caribbean	<p>All of RPM's activities in this region are in collaboration with the Eastern Caribbean Drug Service</p> <p>RPM worked with PAHO to capacitate their staff to support implementation of INVEC-2</p>

PROGRAM	COLLABORATIVE ACTIVITIES
<p>Nepal</p>	<p>RPM's work in Nepal began with collaboration with the WHO Action Programme on Essential Drugs in an evaluation of the Essential Drug Program RPM maintains regular contact with the WHO Country Program</p> <p>RPM has worked extensively with the USAID (bilateral) Child Survival and Family Planning Services Project and the (centrally-funded) Family Planning Logistics Management Project in the planning and implementation of the "Logistics System Improvement Plan " Both of these projects are managed by JSI</p> <p>RPM was instrumental in arranging for the WHO Drug Management and Policy Program to install its drug registration software at the Department of Drug Administration</p> <p>RPM worked with UNICEF in the design and implementation of the <i>Nepal Cost-Sharing in Pharmaceutical Distribution Study</i></p> <p>At the request of the USAID AIDSCAP Project, RPM arranged for the Nepal Chemists and Druggists Association to participate in the Drug Information Network of Nepal</p> <p>RPM is collaborating with GTZ in a program to develop and test methods for improving drug management at the district level</p> <p>RPM has assisted KfW by providing them with information on MOH drug procurement practices, suppliers and practices</p> <p>RPM works actively with a number of local NGOs and university based organizations, including INRUD, Resource Center for Primary Health Care, Nepal Chemists and Druggists Association and the Health Learning Materials Center</p>
<p>Mozambique</p>	<p>RPM has collaborated with Swiss Cooperation, who have contributed to training activities by supporting the costs of translation, and transport and per diem for local trainers</p> <p>UNICEF has contributed to RPM training activities in a similar way by supporting participants' transport and per diem costs</p> <p>The USAID Primary Health Care Project has also contributed to training course costs, and RPM has collaborated with them to develop an approach to supervision of drug management at the district level The PHC Project is managed by URC</p>

PROGRAM	COLLABORATIVE ACTIVITIES
Zambia	<p>RPM provided a member for an international team evaluating options for restructuring the central medical store, and in so doing collaborated with the World Bank, SIDA and DGIS</p> <p>In developing and implementing an approach to improve drug management at the district level, RPM is collaborating with Irish Aid and DANIDA and three USAID Projects, including BASICS, Family Planning Logistics Management (FPLM) and the Zambia Family Planning (ZFP) Project FPLM and ZFP are managed by JSI</p>
Central Asia	<p>In carrying out two studies, RPM has collaborated closely with the USAID BASICS Project and CDC/Atlanta</p>
Poland	<p>Though this program has been cut short due to a funding problem, RPM is collaborating with the USAID Data for Decision Making Project and Jagiellonian University to carry out a study tour for hospital administrators from Krakow DDM is managed by Harvard University</p>
REDSO Eastern and Southern Africa	<p>Participation in this activity will bring RPM once again into collaboration with the USAID Family Planning Logistics Management Project</p>
Reproductive Health	<p>With the collaboration of the MotherCare II project, RPM applied standard case management procedures and listed their related reproductive health commodities RPM applied these data to model the cost of supplying these drugs and medical supplies on a country and/or facility basis MotherCare II is managed by JSI</p>
IMCI	<p>RPM is working on a specialized IMCI assessment tool with the USAID BASICS Project and expects to collaborate with PAHO for testing it in the Latin America region There may also be collaboration with WHO-Afro for testing it in Africa</p>

V SUPPORT FOR USAID'S STRATEGIC OBJECTIVES

A Summary

The USAID Global Bureau's Center for Population and Health has put forth four Strategic Objectives

- **SO1** *Increased use by women and men of voluntary practices that contribute to reduced fertility*
- **SO2** *Increased use of safe pregnancy, women's nutrition, family planning and other key reproductive health interventions*
- **SO3** *Increased use of key child survival and health interventions*
- **SO4** *Increased use of proven interventions to reduce HIV/STD transmission*

To-date, RPM's greatest contribution has been to the third, or *Child Survival* SO RPM is also contributing directly to the second, or *Reproductive Health* SO, though work completed in this area is not nearly so substantial as for child survival RPM expects to contribute to the fourth, or *HIV/STD* SO, but this work is still in the discussion and concept paper stage

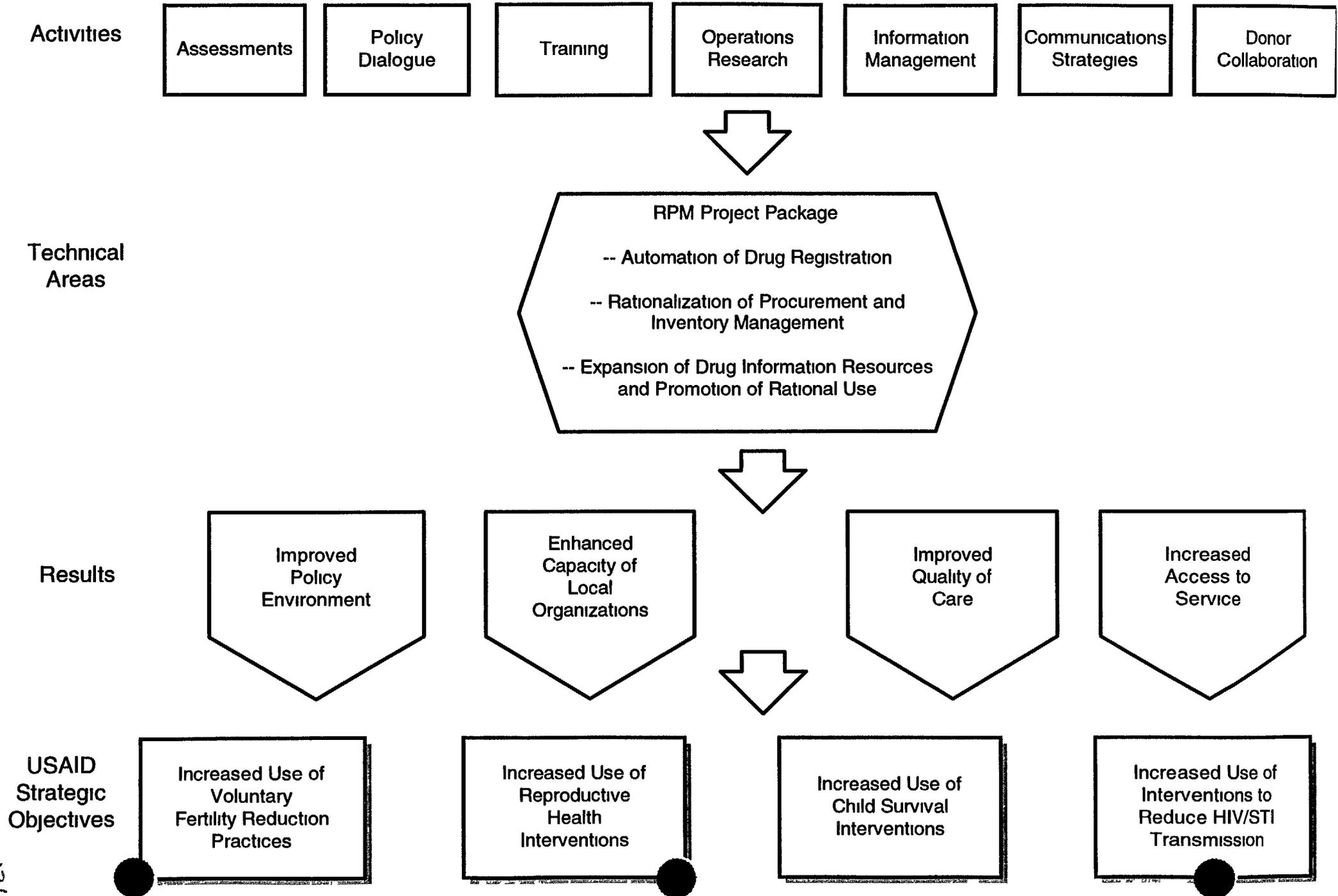
RPM has made some direct contribution to the first, or *Fertility Reduction* SO, mostly in work to strengthen public health logistics systems Arguably, however, the greatest contribution to this SO comes through work in child survival, insofar as success in child health interventions increases receptivity to family planning

B Process

The process by which RPM contributes to the SOs is illustrated in Figure Three What this graphic shows is that

- RPM uses assessments, policy dialogue, training, operations research, information management, communications strategies and collaboration with other USAID projects and donors to--
- Implement packages of interventions drawn from the three mandated technical priorities, which are automation of drug registration, rationalization of procurement and inventory management, and expansion of drug information resources and promotion of rational use This in turn contributes to--
- Achievement of intermediate results, such as improved policy environment, enhanced capacity of local organizations, improved quality of care, and increased access to service Through these results--
- Progress is made toward achieving the four SOs, that is increased use of fertility reduction practices, increased use of reproductive health interventions, increased use of child survival interventions, and increased use of interventions to reduce HIV/STD transmission

Figure Three How RPM Contributes to USAID's Strategic Objectives



C Contributions by SO

The preceding two sections of this briefing book have presented considerable detail on RPM's diverse activities, organized by country, program and mode of implementation. It should not be necessary to repeat all that again here. It may be useful, however, to provide a brief listing of activities by SO. This is presented below, beginning with child survival, the SO for which RPM's contribution is greatest.

- **SO3 *Increased use of key child survival and health interventions***

- ▶ Virtually all important child survival interventions require availability of drug or vaccine products in order to achieve successful outcomes. The six interventions that make up IMCI, for example, require 13 products.

RPM's work on indicator-based assessments, development of software tools for needs estimation, procurement and inventory management, and work to improve drug logistics in Ecuador, the Eastern Caribbean, Nepal, Mozambique, and Zambia all contribute to improved drug availability. The Bangladesh program and REDSO Regional Logistics Initiative, when they get under way, will also contribute.

Policy dialogue activities such as the CEMEM study in Ecuador, the drug cost-sharing study in Nepal, and the restructuring of the central medical store in Zambia are also intended to contribute to increasing drug availability.

- ▶ Even when products are available, they must be used rationally before positive results may be expected. Problems such as prescribing drugs inappropriate to diagnosis, prescribing sub-therapeutic doses, polypharmacy, and poor dispensing practices all minimize the health impact of those drugs that are available. Practices such as unnecessary use of antibiotic drugs, excessive use of injectable drugs, and again, polypharmacy all tend to waste drugs, thus diminishing availability and increasing costs.

RPM's work on indicator-based assessments, rational drug use training in Ecuador and Mozambique, establishment of the Drug Information Network, publication of a drug information bulletin and development of a revised standard treatment guidelines in Nepal, and operations research on prescribing and retail sales practices in Central Asia all contribute to more rational drug use. Rational drug use activities are also planned for Bangladesh.

An important contribution to promoting rational use is the development of PASS, RPM's prescription analysis software. The development of the specialized drug management tool for IMCI also has potential to contribute significantly, especially if, as hoped, it proves possible to test and implement this tool through WHO/CHD, PAHO and WHO-Afro.

- **SO2** *Increased use of safe pregnancy, women's nutrition, family planning and other key reproductive health interventions*
 - ▶ For reproductive health, as with child survival, product availability and rational use are key issues. As a result of recommendations originating at the Cairo conference, there is also concern about the cost implications of program expansion. RPM contributes to this SO by means of its work to develop a costing model for drugs, medical supplies and equipment for reproductive health. As noted, this activity consists of a number of different elements, including list of 25 selected RH problems, spreadsheet estimating the drug, medical supply, diagnostics, and equipment costs for treating one episode of each condition, based on "optimal" product selection assumptions, and a research plan to determine real costs in country settings based on prevailing practices.
- **SO4** *Increased use of proven interventions to reduce HIV/STD transmission*
 - ▶ As noted above, RPM is expecting to develop one or more activities related to HIV/STD transmission, but apart from discussion and preparation of a concept paper, no work has yet taken place. RPM's work on general improvement of drug logistics and product availability is of relevance here, as it would be with most problem-specific health programs.
- **SO1** *Increased use by women and men of voluntary practices that contribute to reduced fertility*
 - ▶ As noted above, RPM's work in support of child survival are probably its most important contribution to fertility reduction. In Nepal and Zambia, RPM is explicitly involved in logistics activities that include family planning supplies. In the OECS, RPM was instrumental in assisting the region and ECDS in managing the transition to procuring contraceptives themselves when USAID ended its supply. It is expected that work in Mozambique will expand to include family planning supplies and the REDSO activity will also cover this ground.

RPM demonstrated its recognition of the importance of family planning supplies and logistics through the special effort made to collaborate with the USAID Family Planning Logistics Management Project. This collaboration is taking place or anticipated in five settings. RPM and FPLM already work under the umbrella of the same work plans in Nepal and Zambia. It is expected that RPM and FPLM will also collaborate directly in Mozambique, Bangladesh, and on the REDSO Regional Logistics Initiative.

VI COST-SHARING ACTIVITIES

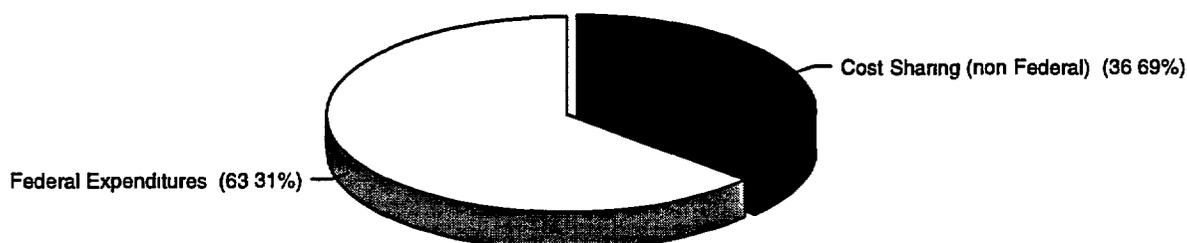
A Summary

This section summarizes RPM's cost-sharing work for the life of the project. Cost-sharing is defined as activities funded by non-federal sources that are "necessary and reasonable for the proper and efficient accomplishment of project objectives" (*Handbook 13, USAID Optional Standard Provisions for U S Non-Governmental Grantees*). Cost-sharing activities have provided an important channel for dissemination of RPM products, such as INVEC-2, as is shown below.

The most significant activities are described here, and a listing of all activities is provided. The percentage at which the project has cost-shared annually is also illustrated. RPM is required to carry out cost-sharing work at a rate of "12.69% of the total core funding over the life of the project" (RPM CA). Through March 1997, RPM had cost-shared an amount equal to about 36.69% of the total project expenditures (USAID + non-USAID). There are other formulas for calculating cost-sharing, but RPM has used this one because the numbers come from the SF269, "Financial Status Report" regularly submitted by MSH's accounting office to the US government.

Figure Four RPM Cost-Sharing

Cost-Sharing as Percent of Total Expenditures



B Activities

INRUD

RPM's most important cost-sharing activity is the Danida-funded coordination of the International Network for Rational Use of Drugs (INRUD). Since 1989, the MSH Drug Management Program has served as the network coordinator for this growing association of health professionals in ten countries. Danida has funded INRUD since 1991. The network consists of member groups in Uganda, Tanzania, Nigeria, Ghana, Zimbabwe, Bangladesh, Thailand, Nepal, the Philippines, and Indonesia, as well as official collaborating centers in the University of Newcastle, Australia, the Karolinska Institute in Sweden, the Drug Policy Group at Harvard University, and WHO.

INRUD members were primary contributors to the WHO publication *How to Investigate Drug Use in Health Facilities*. The manual defines standardized drug indicators and methods and is used throughout the world. INRUD is now collaborating with WHO on a qualitative methods manual to complement this quantitative manual. INRUD also publishes the semi-annual *INRUD News*, and sponsors operations research designed to promote rational drug use. In addition, the network organizes two, one in Africa and one in Asia, "Promoting Rational Drug Use" courses each year. The INRUD core group in Nepal is a key contributor to RPM's work in that country.

Studies and Assessments

During the RPM Project, the DMP has conducted studies and assessments in Nigeria, Sierra Leone, Cambodia, Guatemala, Senegal, Nicaragua, Papua New Guinea, and Mexico. RPM's indicator-based approach to assessments has been tested, refined, and disseminated through much of this work. These activities, funded by a wide variety of donors, have ranged from targeted pharmaceutical sector assessments, as in Senegal, to specific studies on promoting the use of generics, in Nicaragua. One of the largest projects in this category has been the World Bank-funded work with the government of Mexico on study of financing, procurement, and distribution of pharmaceuticals. DMP has also had a project, funded by the government of Mexico, for study of the drug supply system of the Mexican social security program. See the RPM Project annual reports for more details.

Training

In 1993 and 1994, with funding from the PEW Charitable Trusts, Danida, and SIDA, DMP developed a three-volume series of training materials based on *Managing Drug Supply*. The three volumes, Volume 1, *Policy Issues in Managing Drug Supply*, Volume 2, *Financing and Financial Management of Drug Supply*, and Volume 3, *Supply Management*, include both participants' and trainers' guides for sessions on nearly all aspects of drug management.

In 1994, the DMP completed the WHO-funded *Guide for Improving the Diarrhoea Treatment Practices of Pharmacists and Licensed Drug Sellers*. MSH received a one-year follow-on contract from WHO, through the Diarrhoeal and Acute Respiratory Disease Control Programme, to write two additional chapters for the *Guide*: "Expansion of Training to ARI" and "How to Expand and Sustain the Intervention." Field tests for this work were conducted in Kenya, and the Philippines.

In 1996, DMP hosted a twelve-week course in "Drug Information Systems" for five Indian pharmacists and doctors, funded by the Pan American Health Organization. Four homeopaths joined the group for the first four weeks of the course. The main objective of the course was to enable participants to apply acquired knowledge and skills to plan and conduct a drug information research project. They prepared project proposals to obtain funding and implement improved drug information systems in India.

The same year, DMP also hosted a four-week course on "Drug Regulation Systems" for two pharmacists from the Philippines, again funded by PAHO. The objective of this course was to evaluate drug information, describe U.S. legislation for quality assurance (QA) and good manufacturing practices (GMP), and describe the process for developing QA in pharmaceutical care. The participants prepared short reports that reviewed topics in QA and GMP.

Software

Software programs developed or finalized under the RPM Project, such as INVEC-2, have been used in several cost-sharing activities. Under contracts with WHO, the Zimbabwe Essential Drugs Action Programme, the World Bank, the government of Mexico, and the Federal Government of Nigeria, the DMP has installed INVEC or INVEC-2 in Malawi, Zimbabwe, Cambodia, Mexico, and Nigeria. These software programs have usually been installed in one or more central or regional medical stores, and are designed to assist in improving inventory management practices.

Other Activities

A complete listing of all of RPM's cost-sharing activities can be found in Table Eleven, below.

Table Eleven RPM Cost-Sharing Project Funding and Expenditure Summary

Project Name	Donor	Country	Activity	Start Date	End Date	Est cost
WB Mexico	SHFDOM	Mexico	Improvement of DMP	3-22-93	10-22-93	216,112
MDS PEW	PEW	Worldwide	Int'l Drug Reference Manual	3-3-93	3-31-95	200,000
MDS Danida	DANIDA	Worldwide	Int'l Drug Reference Manual	3-3-93	3-31-95	155,000
MDS SIDA	SIDA	Worldwide	Int'l Drug Reference Manual	3-3-93	3-31-95	18,750
MDS WHO	WHO	USA	Managing Drug Supply II	11-24-93	6-30-94	50,000
WHO RIT/Japan	WHO	Japan	HPM-Tuberculosis	8-15-93	9-30-93	8,757
WHO/CDD II	WHO	USA	Drug Sellers Guide-II	9-1-93	4-30-95	178,678
ZEDAP INVEC	ZEDAP	Zimbabwe	INVEC	9-3-93	10-31-93	13,800
Malawi INVEC	WHO	Malawi	INVEC	9-15-93	11-1-93	12,000
WB Guatemala	WB	Latin America	WB-LAC-Brooks	11-3-93	11-30-93	16,300
WB Guatemala II	WB	Latin America	WB-RPM-Brooks	12-7-93	1-31-94	5,424
PRDU Ghana	Tuition-Based	Ghana	Promoting Rational Drug Use	12-1-93	6-30-94	106,766
BU Course	BU	USA	BU/CIH	2-23-94	3-31-94	1,564
WB Guatemala	WB	Guatemala	Soc/Econ Modernization Loan	3-7-94	5-30-94	49,833
TB Rapid Assessment	JAPATB	Japan	Rapid Assessment Manual TB	12-29-93	3-31-96	4,850
Mexico WB II	SHFDOM	Mexico	Mexico-Phase II	4-11-94	12-31-94	141,942
Japan RIT course	WHO	Japan	HPM-TB II	8-15-94	9-30-94	8,836
Teach Essen Drugs	BU	USA	BU/CIH	8-1-94	8-19-94	1,455
WB Cambodia	WB	Cambodia	Cambodia Pharm Assessment	9-15-94	11-30-94	30,312
BU/CIH TB course	BU	USA	BU/CIH	10-6-94	10-11-94	388
BU/CIH Essen Drug course	BU	USA	BU/CIH	10-20-94	12-9-94	776
WB Nigeria Procure Review	WB	USA	Pharm Procurement/Dist Rev	10-3-94	10-31-94	15,066
WB Sierra Leone	WB	Sierra Leone	Drugs/Med Supplies Support	11-27-94	12-24-94	21,230
WB Senegal	MHWSN/WB	Senegal	Pharm Supply System Study	4-1-95	6-30-95	146,941
WB Nicaragua - Marketing	MOHNIC/WB	Nicaragua	Marketing of Generic Products	7-3-95	12-31-95	131,537
WB Nicaragua CMS	MOHNIC/WB	Nicaragua	CIPS	7-10-95	3-31-96	129,344
WB Papua New Guinea	WB	PNG	Reform of Hosp Drug Procure	9-5-95	1-31-96	32,491
WB Cambodia	WB	Cambodia	Install INVEC-2	9-5-95	9-30-95	13,284

Zimbabwe INVEC 2	ZEDAP	Zimbabwe	Essential Drugs Action Prog	11-5-95	11-10-95	2,987
Mexico/CEDESS	CEDESS	Mexico	IMSS Study of Drug Supply	2-12-96	5-26-96	133,670
BU Course	BU	USA	96 Drug Policy Issues	3-17-96	3-18-96	1,146
PRDU Course INRUD Uganda	Tuition/DANIDA	Uganda	PRDU Course-INRUD	3-25-96	6-30-96	32,500
PAHO/WHO Drug Info	PAHO/WHO	USA	PAHO/WHO Drug Info System	5-3-96	8-15-96	54,802
Zimbabwe Essential Drug	ZEDAP/DANIDA	Zimbabwe	ZEDAP	4-12-96	4-30-96	3,380
Zambia	MOHZAM	Zambia	DMP/RPM Project	8-7-96	9-4-96	14,546
PAHO Drug Regulation Sy	PAHO/WHO	USA	PAHO/Drug Regulation System	10-3-96	11-30-96	15,991
Int'l Conference on Improving	WHO	USA & Thailand	ICIUM	9-13-96	4-30-97	5,000
Follow-up to Installation	ZEDAP	Zimbabwe	Follow-up Install MIS-ZEDAP	10-23-96	10-25-96	2,484
Cambodia Essential Drug	UNICEF	Cambodia	Essential Drug Programme	11-24-96	5-31-97	39,118
Installation of INVEC	WB	Cambodia	Install INVEC-2	11-25-96	1-31-97	11,602
Follow-up to Installation	ZEDAP	Zimbabwe	ZEDAP	12-9-96	12-13-96	2,877
INRUD Danida	DANIDA	Worldwide	INRUD-Danida Portion	1-1-94	12-31-94	395,467
INRUD Danida	DANIDA	Worldwide	INRUD-Danida Portion	4-1-95	3-31-96	452,972
INRUD Danida	DANIDA	Worldwide	INRUD-Danida Portion	4-1-96	3-31-97	453,120
Int'l Conf on Improving	WHO	USA & Thailand	ICIUM	10-17-96	5-30-97	5,000
Drug Manual Sales	SALES	USA	Drug Manual Sales	7-1-95	1-1-99	3,639
Drug Manual Sales	SALES	USA	Drug Manual Sales	7-1-96	6-30-97	1,726
						3,343,463

VII PROJECT MANAGEMENT

A Organization for Implementation

RPM-Worldwide has devoted considerable attention to organizing itself for efficient implementation of its portfolio of country and central level programs. Specific elements of organization for implementation include:

- The Director and Deputy Director have divided responsibility for coordinating the two basic groups of activities that make up the portfolio. Director James Bates is responsible for the country programs and Deputy Director Elvira Beracochea is responsible for the central level programs.
- For each program or activity, RPM-Worldwide assigns a "program manager" who is responsible for all aspects of implementation, including development and updating of work plans, communications with USAID missions and host country counterparts, delivery of expected outputs, and working with the Administrative/Contracts/Financial Officer for periodic reporting and financial monitoring. RPM-Worldwide believes that continuity of program management is essential for both productivity and retaining the confidence of clients. Once program managers are assigned, every effort is made to avoid changing them. Changes in program managers are a rarity at RPM.
- Once new programs and technical activities have evolved enough to permit realistic specification of work to be carried out, the program managers are responsible for developing work plans. RPM-Worldwide's work plans have a standard format, which include sections on USAID Mission strategic objectives, activities to carry out, constraints and adjustments, estimates of levels of effort required, and budgets. Program managers periodically update the work plans according to need.
- Within the context of country and central level programs, major outputs and processes are documented. The documentation takes such forms as trip reports, system design documents, reports of studies, and training materials. Many such outputs have been gathered and set aside for the Evaluation Team.
- RPM-Worldwide has responsive mechanisms for tracking the status of budgets by program or activity. The Administrative/Contracts/Finance Officer provides project management with monthly project wide pipeline analysis. At any time, and on relatively short notice, individual program managers may request budget updates. This enables RPM not only to do its work within budgetary limits, but also to give constructive responses to requests for assistance that are appropriate to the project's mandate, but that may not have been originally included in work plans.

B Marketing

There are two recent developments within USAID that make marketing especially important to RPM. One is the advent of the field support funding system whereby individual USAID Missions and Regional Bureaus decide where, that is, in which projects, to invest their funds. The other is the emergence of Strategic Objectives and their related Results Packages as the mechanism for determining technical priorities and the consequent allocation of funds.

The result of these developments is that in order to attract and retain funding, RPM must actively seek out potential clients and demonstrate to them the relevance of the work which the project does. RPM-Worldwide's Director and Deputy Director have made special efforts to reach out to individual USAID Missions, Regional Bureaux, different technical divisions within the Global Bureau and other USAID projects. Once new clients are identified and programs are funded, this contact continues, to ensure that the work being carried out by individual program managers and other RPM staff is meeting expectations. The relative success of these efforts is demonstrated by the information presented in Table Three in Section Three, which shows steady increases in the numbers of country and central level programs, and concomitant increases in funding levels.

C Administration

The RPM office opened for business on December 15, 1992, after moving the MSH Drug Management Program from Boston to Washington, less than three months after MSH's signing of the cooperative agreement. By January 1993, RPM was fully staffed and equipped, and technical activities were proceeding. During the first months of operation, the administrative staff focused on developing internal management systems. Filing systems and documentation procedures were established to aid in contract compliance. The Traveler Logistic Checklist has proven to be particularly useful. This is a checklist with corresponding forms for ensuring that all travel has USAID concurrence, meets all other cooperative agreement compliance criteria, and that itineraries, tickets, visas, and per diem advances are arranged in a timely manner.

The Administrative/Finance Officer developed financial tracking systems that provide information required for MSH internal management as well USAID. A "Contracts Approvals Summary," was produced that defines the levels of approval required for various types of expenditures under the terms of the cooperative agreement.

In the following four years of RPM, the project has continued to develop and implement administrative systems that ensure its efficiency and effectiveness. These systems are documented in the *DMP/RPM Standard Operating Procedures* manual. They include procedures for routine office systems such as accounting, hardware inventory and maintenance, travel procedures, and standard filing systems.

RPM routinely conducts activities that promote group planning and communication. These activities include frequent staff meetings and work planning meetings where activities and corresponding resources are consolidated in a time line. RPM has also developed systems of organizing resources so that they are easily accessible. These systems include the Who, What, Where database of consultants and vendors, and the bibliography of reports, journals, and reference materials on file.

RPM falls under the umbrella of the well-established management systems of MSH and has developed project practices that follow standardized organizational procedures. These systems are documented in the *MSH Employee Handbook*. RPM participates in standard MSH programs such as the "Drug Free Workplace" trainings and bi-annual staff performance planning and review meetings. RPM staff participate in MSH trainings such as the "Supervisory Training" and "Training of Trainers Workshop."

RPM has focused on cultivating project staff skills and has supported staff attendance at MSH internal trainings and relevant external trainings. It has also conducted a number of internal training seminars in commercial and RPM-developed software.

D Financial Management

1 **Funding** USAID's estimated life of project contribution is \$8,900,000 to MSH for activities conducted under the RPM cooperative agreement, of this sum \$6,400,000 was designated as core and \$2,500,000 as add-on funding. To-date, USAID has obligated a total of \$7,937,311, \$5,892,000 in core, field support, and OYB funds and \$2,045,311 in add-ons. RPM expects to receive additional obligations within the \$962,689 ceiling this year. Please see the attached report "RPM Obligations and Ceiling," and the "Fiscal Data" report that shows cumulative obligations through March 1997.

2 **Field Support** Prior to fiscal year 1995, USAID obligated two types of funds: central funds were obligated into contracts and cooperative agreements and mission/regional funds were obligated into buy-ins and add-ons. In fiscal year 1995, USAID restructured its funding system from administering funds centrally to the decentralized system of field support (FS), where funding decisions rest primarily with the missions. The Global Bureau continues to obligate limited amounts of central funds for research, technical leadership, new initiatives, and support to international organizations. FS funds are to be used for activities conducted in a specific country or region.

Field support funds are expected to cover both country-specific expenses incurred in providing technical assistance as well as a prorated share of cooperative agreement management costs. This prorated share, or allocable cost factor (ACF), is composed of costs such as project infrastructure, management, and administration. The ACF figure fluctuates, currently it is approximately 26%.

RPM has adapted its budgeting and tracking practices to manage project finances in response to the field support funding system. RPM tracks expenditures against FS obligations and is responsive to mission requests for financial updates.

3 **Financial Controls** RPM maintains a system of tight financial controls. All procurements are made through a system that ensures open and free competition, cost comparisons, compliance with source and origin requirements, and sound business practices. The system ensures that all expenditures are allowable, attributable to their respective projects, and reasonable. Every expenditure receives prior signature approval by the appropriate project manager. RPM procurement procedures are documented in the *DMP/RPM Standard Operating Procedures* manual. RPM procurements also fall under MSH's organizational standards that are documented in the *MSH Employee Handbook* and are enforced by the MSH Finance Office.

- 4 **Reporting** As required in its cooperative agreement, RPM routinely submits a number of reports to the RPM CTO. These include annual work plans, quarterly activity reports, annual progress reports, trip reports, and task force meeting reports. The MSH Accounting Office submits the Financial Status Report (OMB SF-269) to USAID/M/FM/PAFD quarterly, this document shows government and recipient outlays over the life of the project.

In addition to the program performance and financial reporting detailed above, RPM regularly provides individual program managers with reports of expenditures and balances for their activities. To this end, RPM developed financial, accounting, and management information systems capable of tracking expenditure by source of funds, task, sub-task, and geographic and technical area. Financial reports typically include information such as funds obligated, project budgets, activity budgets, funding source, drawn down to-date, accruals, non-routine commitments, and balances available. Pipeline analyses, which monitor projected expenditures with current funding, are also conducted on a regular basis.

RPM ensures that financial and program performance information is at all times current and accessible to USAID bureaus and missions and to the RPM CTO. RPM is committed to responding as quickly as possible to *ad hoc* requests for information.

Rational Pharmaceutical Management Project	
RPM Obligations and Ceilings	
RPM (HRN-5974-A-00-2059-00)	
	Funding Amount
Total Obligations	\$7,937,311
Total Ceilings	\$8,900,000
Total Unobligated Balance	\$962,689

Rational Pharmaceutical Management Project							
Fiscal Data							
MSH Contract Number	Funding Type	Obligation Date	Projected Funding Period	Funding Amount	Cumulative Obligation	Spent To-Date (thru 3/31/97)	
RPM (HRN-5974-A-00-2059-00)							
Core							
A3100	CORE	25 SEP 92	25 SEP 93	\$1,000,000	\$1,000,000	\$1,000,000	
A3100	CORE	14 JUL 93	31 MAY 94	\$100,000	\$1,100,000	\$100,000	
A3100	CORE	14 JUL 93	31 MAY 94	\$900,000	\$2,000,000	\$900,000	
A3100	CORE	16 MAY 94		\$720,000	\$2,720,000	\$720,000	
A3100	CORE	31 MAR 95	31 DEC 95	\$200,000	\$2,920,000	\$16,954	
A3100	CORE	5 SEP 96		\$300,000	\$3,220,000		
				subtotal	\$3,220,000	\$2,736,954	
Field Support							
A3100 (Nepal)	FS	31 MAR 95	31 DEC 95	\$380,000	\$3,600,000	\$380,000	
A3100 (Ecuador)	FS	31 MAR 95	31 DEC 95	\$200,000	\$3,800,000	\$200,000	
A3100 (Mozam)	FS/OYB	26 JUN 95		\$90,000	\$3,890,000	\$90,000	
A3100 (Mozam)	FS	26 JUN 95		\$200,000	\$4,090,000	\$200,000	
A3100 (Poland)	FS	22 AUG 95		\$100,000	\$4,190,000	\$53,761	
A3100 (Nepal)	FS	5 SEP 96		\$235,000	\$4,425,000	\$194,025	
A3100 (Ecuador)	FS	5 SEP 96		\$298,000	\$4,723,000	\$237,456	
A3100 (Mozam)	OYB	5 SEP 96		\$230,000	\$4,953,000	\$62,941	
A3100 (Peru)	FS	5 SEP 96		\$49,000	\$5,002,000	\$405	
A3100 (Zambia)	FS	5 SEP 96		\$100,000	\$5,102,000	\$33,713	
A3100 (Mozam)	OYB	18 SEP 96		\$30,000	\$5,132,000	\$0	
A3100(CAIDP)	OYB	18 SEP 96		\$110,000	\$5,242,000	\$59,056	
				subtotal	\$2,022,000	\$1,511,357	
				total A3100	\$5,242,000	\$4,248,310	
A3102 (NIS + Russia)	ADD-ON	16 AUG 93	16 DEC 95	\$1,940,732	\$7,182,732	\$1,224,874	
A3103 (Mozam)	ADD-ON	30 SEP 93	31 AUG 96	\$104,579	\$7,287,311	\$104,329	
A3104 (NIS + Russia)	OYB	25 SEP 94	31 MAR 95	\$650,000	\$7,937,311	\$61,886	
				total	\$7,937,311	\$5,639,400	

RPM-RUSSIA COOPERATIVE AGREEMENT

VIII OVERVIEW

A Program Objectives

The RPM-Russia Project began with add-on funds to the RPM-Worldwide CA. Additional funds, in the form of a separate CA, were provided to expand the activities being undertaken under the add-on. The program objectives for Russia, therefore, are the same as those of the RPM-Worldwide Project.

Technical Area and Activities

The specific content of the Russia CA was developed to respond to political, economic, and social changes occurring in Russia, and differ from the RPM-Worldwide CA. Specific activities being undertaken include

- Product selection/formulary development,
- Procurement and tender management,
- Drug information development,
- Community pharmacy management,
- Rational drug use, and
- Drug use review

Given the large size of the country, it was initially decided that the project begin by working in one Russian oblast, an administrative unit corresponding most closely to a US state. Using the add-on funds to the RPM-Worldwide CA, RPM-Russia began its work in Ryazan. With the awarding of the CA, the project was able to rollout technical activities to two additional oblasts, and disseminate information throughout Russia.

Site selection criteria for the initial oblast, developed by RPM-Russia and USAID, were as follows:

- Interest on the part of local officials and specialists in implementing pharmaceutical sector reforms,
- Policies that support the introduction of competitive procurement techniques,
- Logistics feasibility in terms of bringing high-level US consultants to the site,
- Presence of medical and pharmacy schools,
- Representative of a typical Russian oblast, and
- Interest in serving as a model for other oblasts as the project expands.

B Brief History

Two reconnaissance visits were made to Russia after receiving add-on funds in order to establish relationships in the MOH, and select the pilot oblast Pharmedinfo, a quasi-governmental organization responsible for provision of drug information in Russia was chosen by the MOH as RPM-Russia's official collaborating organization. Based on the criteria listed above, Ryazan Oblast, located south of Moscow, was chosen as the pilot site in January 1994.

An in-depth pharmaceutical sector assessment of Ryazan Oblast was conducted between May and November 1994. Preparation included substantial adaptation of existing assessment tools, and orientation of local officials and specialists to western pharmaceutical terminology and concepts. The entire assessment process resulted in the creation of a large number of local stakeholders.

A "Policy Options Workshop" was held in the oblast in November 1994 for approximately 80 officials and specialists from Ryazan, Moscow, Saint Petersburg, and the US. Assessment findings were presented and participants drafted work plans for each RPM-Russia technical area. The workshop resulted in further creation of stakeholders.

The Russia CA was awarded shortly after the "Policy Options Workshop," enabling RPM-Russia to identify two oblasts for rollout activities and expand technical work in Ryazan. Novgorod and Pskov Oblasts were chosen for rollout in April 1995. The RPM-Russia Moscow office was opened in July, and Arlington, VA, based technical staff were added.

Assessments were conducted in Novgorod and Pskov Oblasts in November and December 1995, relying heavily on local specialists to collect and analyze indicator data. A joint Policy Options Workshop was held in March 1996 for 64 participants.

Technical implementation in Ryazan began immediately after the policy options workshop. In the rollout oblasts, initial enthusiasm was so great that technical work began even before assessments were conducted. In all three oblasts, a variety of methods were used, as described below.

Visits by specialists

RPM-Russia teams, composed of US consultants, specialists from the RPM-Russia Moscow office, and prominent Russian experts made visits to oblasts approximately every two-three months in 1995-96. Most technical visits involved implementation of formulary systems in hospitals.

Meetings

RPM-Russia has participated in three Man and Drugs Congresses by conducting symposia and round table sessions. The sessions at last two congresses focussed on project accomplishments and most presentations were made by local officials and specialists. In 1996, RPM-Russia made presentations on drug selection and use at the American International Health Alliance (AIHA) Annual Conference in the US, and at a conference on US-Russian health projects sponsored by Abt Associates. In January 1997, RPM-Russia made two presentations at a Pharmacology Conference held at the Saint Petersburg State Medical University.

Study tours

Three US study tours have been conducted. A "Health Systems Overview Study Tour" was held in Texas for Ryazan officials in June 1995. In October 1995, a formulary development tour was conducted in Arizona for Ryazan and Novgorod officials. The last tour, in community pharmacy management, was conducted in Michigan in August 1996 for specialists from all three project oblasts, and Moscow.

Workshops

Indicator-Based Assessments In September 1995, RPM-Russia conducted a pre-assessment workshop for 24 Novgorod and Pskov specialists in the use of indicators in evaluating pharmaceutical systems.

Formulary Development RPM-Russia conducted a mini workshop on formulary development in September 1995 for Novgorod and Pskov Oblasts at the request of local officials eager to begin work in this area. The first major workshop was held in Moscow in February 1996 for 60 participants from the three RPM-Russia oblasts. Abt Associates sponsored additional participants from ZdravReform Project oblasts. In May 1996, a smaller workshop was held for Novgorod and Pskov specialists. As a result of the RPM-Russia presentation at the AIHA Annual Conference in late 1996, a workshop was held in Moscow for 21 participants from partnership hospitals in Russia, Georgia and Armenia.

Drug Use Review One workshop was held in Ryazan Oblast in September 1996 for 60 participants from Ryazan, Novgorod, and Pskov oblasts.

Community Pharmacy Management RPM-Russia conducted an "Advanced Community Pharmacy Management Workshop" in Ryazan Oblast in September 1995. The main goal was to introduce the process of business plan development. Participants attended a second, more intense workshop in March 1996.

Rational Drug Use In May 1997, RPM-Russia collaborated with WHO to conduct a workshop on "Integration of Rational Prescribing Practice in Medical Undergraduate Curricula in the NIS." The workshop focussed on the WHO *Guide to Good Prescribing* which was adapted by RPM-Russia for use in Russia. The workshop was attended by approximately 60 participants from seven NIS countries.

Courses

Knowledge of clinical pharmacology is critical to successful implementation of drug formulary systems, but is an area in which local physicians consistently say they need more training. In November 1995, RPM-Russia, in collaboration with the Russian State Medical University, conducted a three-week course in clinical pharmacology for 140 Novgorod and Pskov physicians.

IX STAFFING

The RPM-Russia Project currently has seven staff members. Four of these work full-time on Russia and three divide their time between RPM-Russia and the RPM-Worldwide project. See Table Twelve for details.

Table Twelve RPM-Russia Staff

Name	Position	Primary Responsibility
Anthony Savelli (full-time)	RPM-Russia Project Director	Overall Project Management
Thomas Moore	Senior Program Associate	Technical Implementation
Olya Duzey	Senior Program Associate	RPM Ukraine Program Manager
Andrei Zagorski (full-time)	Program Associate	Project Management (Moscow Office)
Valarie De Pass	Senior Program Assistant	Support Services (Arlington)
Olga Aksyonova (full-time)	Outside Service Contractor	Support Services (Russia)
Olga Solovieva (full-time)	Outside Service Contractor	Technical Implementation (Russia)

X PROGRAM DESCRIPTION

A Russia

1 Strategic Importance

USAID involvement in the Russian pharmaceutical sector began with the provision of drugs through medical humanitarian assistance projects RPM-Russia began work in Russia during the Health Care Improvement Project that followed, under the rubric of a pharmaceutical security component focusing on improving drug availability through rational procurement and inventory management As drug supply improved, RPM-Russia's focus changed to introducing new forms of service delivery

Currently, the mission has a results framework that includes three strategic goals, one of which applies to RPM-Russia Strategic Goal 3--Respond to humanitarian crises and strengthen the capacity to manage the human dimension of the transition to democracy

The RPM-Russia Project supports Strategic Goal 3, which includes two Strategic Objectives and a number of intermediate results

SO 3 2 Improved effectiveness of selected social benefits and services

SO 3 3 Increased capacity to deal with environmental pollution as a threat to public health

RPM-Russia directly supports IR3 3 2, "New approaches to service delivery adopted "

2 Needs Assessment

RPM-Russia activities are being implemented through development of a demonstration site in one *oblast*, with rollout to two additional sites Two reconnaissance visits, in November 1993 and February 1994, were needed to chose Ryazan Oblast as the demonstration site The rollout *oblasts* of Novgorod and Pskov were chosen in April 1995 The field work for the Ryazan pharmaceutical sector assessment was conducted in May 1994 and the Novgorod/Pskov assessments were conducted in November-December 1995

Key Assessment Findings and Conclusions

Drug selection/formulary development

- Systems do not exist at the health administration or facility levels for rationally selecting drugs for procurement and use
- Some drugs used are of unproven quality or efficacy Cost effectiveness is generally not considered when selecting drugs
- The availability of funds for drug procurement is extremely limited
- There has been a significant increase in the number of drug suppliers operating in *oblasts*, resulting in an increase in the number of therapeutic alternatives and drug products Many previously unknown drug products have been introduced
- Physician and pharmacist training in clinical pharmacology is inadequate

- Decision makers do not have access to unbiased sources of drug information for making drug selection decisions

Drug use review

- Ongoing systems for reviewing drug prescribing and use for inpatients and outpatients do not exist
Public health officials and decision makers do not have a clear idea if drugs are being used rationally, making it difficult to identify problems and design and carry out interventions

Drug procurement

- Drug purchases are most often made through negotiations with drug distributors and manufacturers
Competitive tender practices are not employed
- Clients report long delivery times in getting drugs from wholesalers
- Decision makers often use information provided by pharmaceutical sales representatives to make procurement decisions
- The process of determining drug needs and quantities is done manually and without the use of standard formulas

Community pharmacy management

- Delays in reimbursement for exempt prescriptions, as well as punitive tax structures, contribute heavily to financial difficulties of pharmacies
- Community pharmacies employ excessive numbers of personnel by western standards

Rational drug use

- Standard Treatment Guidelines exist, and are used in public health facilities, but are in need of revision
- Prescribing is reported to be excessive for patients eligible to receive drugs free of charge or at reduced prices

3 Work Plans

Dates October 1994 -September 1995
October 1995 -December 1997
January 1997 -April 1998
April 1997-July 1998

Summary of Key Activities

- Ryazan Oblast was chosen as the RPM-Russia demonstration site in February 1994, largely based on the reform-minded attitudes of government and public health officials that RPM-Russia met during initial visits. Ryazan proved to be an ideal site for developing methodologies and tools that were disseminated to rollout *oblasts* and throughout Russia.
- The Ryazan Oblast assessment, conducted between May and October 1994, had value far beyond the collection of baseline data and information. During the assessment, which consisted of planning meetings in Arlington, Moscow, and Ryazan, training of local data collectors, field work, and collaborative report writing, RPM-Russia succeeded in creating a large number of stakeholders, and began the technology transfer process.
- The Ryazan Policy Options Workshop in November-December 1994, served to create additional stakeholders. During this workshop, RPM-Russia and Russian specialists decided on the introduction of hospital-based formulary systems as a key project activity.
- Ryazan officials participated in a Health Systems Overview Study Tour in Texas in June 1995. The tour included visits to health facilities and government offices, and lectures on drug legislation, regulation and procurement. The most significant result of the tour was that the group left with a much better understanding of US health insurance systems, and the implications of various reimbursement schemes on drug selection and use, which strengthened local commitment to formulary system implementation.
- In April 1995, Novgorod and Pskov were chosen as rollout *oblasts*. Officials and specialists in these *oblasts* readily recognized the need for drug formulary systems. Both *oblasts* have drafted *oblast* formularies based on the work done at the hospital level.
- RPM-Russia established a Moscow office in July 1995. The office, now staffed by a director, office manager, and physician consultant has greatly enhanced RPM-Russia's abilities to plan and conduct training and technical activities, and to disseminate information.
- Technical work in Ryazan Oblast during 1995 resulted in the establishment of the project's first hospital formulary committee at Ryazan Oblast Clinical Hospital, which drafted and approved a drug formulary list for the 1500-bed facility. RPM-Russia developed the *Manual for the Development and Maintenance of Hospital Drug Formularies*, and related training materials based on this technical work.

- RPM-Russia has participated in the annual Man and Drugs Congress in Moscow since 1995. The symposia and roundtable sessions conducted by RPM-Russia have resulted in dissemination of information about the project to hundreds of specialists from throughout Russia. Through extensive use of Russian collaborators as speakers, RPM-Russia has created a sizable group of local advocates.
- RPM-Russia adapted and translated the *Rapid Pharmaceutical Management Assessment: An Indicator-Based Approach* manual and conducted a Self Assessment Workshop for Novgorod and Pskov *oblasts* in September 1995. The workshop and manual resulted in the indicator portion of the assessments in those *oblasts* being conducted entirely by local specialists. This activity served to convince local officials of the value of routine collection of information for use in decision making.
- The first large scale RPM-Russia Formulary System Development Workshop was conducted in February 1996 for representatives from the three RPM-Russia *oblasts*. The workshop was the first use of the formulary development manual as a teaching tool.
- With eight representatives attending from *oblasts* participating in the Abt Associates ZdravReform Project, the February 1996 workshop marked RPM-Russia's first technical collaboration with other USAID-funded projects. RPM-Russia has since collaborated with the American International Health Alliance (AIHA) to conduct a similar workshop for hospitals participating in the USAID-funded Hospital Partnership Project.
- RPM-Russia developed a manual on *Guidelines for Implementing Drug Utilization Review in Russian Hospitals* as a means of ensuring rational prescribing and use of drugs. A workshop was held in Ryazan Oblast in September 1996 for participants from RPM-Russia *oblasts*.
- In December 1996, the Saint Petersburg State Medical University hospital approved and published a formulary list for three of its departments. Several physicians from the hospital became aware of RPM-Russia earlier in the year through a journal article, and contacted the Moscow office to request the formulary development manual and information on the project. The list was created using the RPM-Russia methodology explained in the manual, but without direct technical assistance from RPM-Russia.
- The *Ryazan Oblast Hospital Formulary Manual* was published in April 1996. The manual contains monographs for all drugs approved for prescribing and use at the hospital, as well as information to promote rational drug prescribing and use.
- RPM-Russia adapted and translated the *WHO Guide to Good Prescribing* in cooperation with WHO. An NIS-wide workshop, based on the guide, was conducted in Moscow in May 1997, by WHO and RPM-Russia.

4 Collaboration

RPM-Russia has engaged in collaborative activities with a number of other USAID-funded projects, as well as international and Russian organizations.

US Organizations Activities in the US

Courses

MSH conducted two courses on "Issues in Pharmaceutical Policy and Management" with USAID funds provided through Partners for International Education and Training (PIET) Forty-three participants from Russia and Central Asian Republics attended the courses, which were held between November 1993 and March 1994 Although Russians from the RPM-Russia demonstration site were not included, RPM-Russia staff members were heavily involved in the training, and Russian language training materials were developed RPM-Russia gained experience in working with Russian health officials, and learned about the status of the pharmaceutical sector

MSH and Howard University collaborated on three pharmaceutical courses during 1994 with funds provided by the Academy for Educational Development (AED)

- "Drug Information and Use"
- "Health Care Delivery and Pharmaceuticals Private Sector Management"
- "Health Care Delivery and Pharmaceuticals Private Sector Management II"

MSH conducted a follow-on "Pharmaceutical Sector Management and Training Workshop" for AED in Ryazan Oblast in May 1995 for 35 participants from these US courses, and 14 additional participants selected by RPM-Russia. AED also provided funds for ten participants to attend the Drug Utilization Review Workshop in Ryazan in 1996

Finally, in Arlington, VA, Howard University and MSH conducted a "Pharmaceutical Sector Management Training Program" for eight participants from RPM-Russia *oblasts* and Moscow in July 1996

Study Tours

RPM-Russia conducted three US study tours, in each case collaborating with a US organization with a particular area of expertise The tours, and collaborating organizations, were as follows

- "Health Systems Overview" -Texas Association of Community Health Centers
- "Formulary System Development" - University of Arizona College of Pharmacy
- "Community Pharmacy Management" - Michigan Pharmacists Association

Organizations Working in Russia

RPM-Russia and the Abt Associates *ZdravReform* Project have collaborated on a number of activities

- Abt provided funds to reproduce 3,000 copies each of three of RPM-Russia's manuals
- RPM-Russia conducted a session at an all-Russia conference on "Health Reform in Russia, Experience of Russian-American Cooperation" organized by Abt Abt sponsored several RPM-Russia *oblast* participants to attend
- Abt sponsored participants from four *ZdravReform oblasts* to attend an RPM-Russia "Formulary Development Workshop "

- The RPM-Russia *Manual for the Development and Maintenance of Hospital Drug Formularyes* was included on a CD ROM disk containing Russian language health sector reference materials produced by the *ZdravReform* Project

More recently, RPM-Russia has worked with the American International Health Alliance (AIHA) Hospital Partnership Project

- RPM-Russia made a presentation on drug selection at the AIHA Partnership Conference for the NIS in Des Moines, Iowa
- Interest generated at the conference resulted in a joint workshop on formulary system development for 21 participants from partnership hospitals in Russia, Georgia and Armenia, with RPM-Russia responsible for technical content

The World Health Organization (WHO) is working in the NIS with funds provided by the UK Know-How Fund, and USAID RPM-Russia is collaborating with WHO in the area of rational prescribing

- RPM-Russia worked with WHO to adapt the WHO *Guide to Good Prescribing* for use in Russia. The Guide was one of the manuals reproduced with funds provided by Abt Associates for wide dissemination
- RPM-Russia and WHO conducted a workshop on "Integration of Rational Prescribing Practice in Medical Undergraduate Curricula in the NIS," based on the *Guide to Good Prescribing*

The follow-on project to *ZdravReform* is the Kaiser Permanente International (KPI) Russia Project. Based on the success of activities done with Abt, RPM-Russia has been included in the KPI work plan. Although formal collaboration has not begun, discussions have taken place concerning RPM-Russia participation in four large conferences, and technical work in Moscow *oblast*

Russian Collaborators

The non-profit sector has only recently begun to develop in Russia. Therefore, when RPM-Russia began its work, all efforts were to develop relationships with government organizations, such as *oblast* public health departments, hospitals, and universities. The federal Ministry of Health officially requested that RPM-Russia work with Pharmedinfo, a quasi-governmental organization responsible for the development and dissemination of drug information in Russia. RPM-Russia's most important collaborative relationships today are with Pharmedinfo, the Ryazan, Novgorod and Pskov public health departments, Ryazan Oblast Clinical Hospital, the Russian State Medical University, Ryazan Medical University, and the Saint Petersburg State Medical University

5 Most Important Achievements

Training

- Approximately 50 Ryazan and Moscow officials and specialists were oriented to the RPM-Russia pharmaceutical sector assessment methodology, including the use of standard indicators. RPM-Russia provided instruction to 35 specialists in three *oblasts* in collecting indicator data

- At the Ryazan, and Novgorod/Pskov “Policy Options Workshops,” 144 specialists were oriented to project goals and accomplishments, and learned about the status of the pharmaceutical sector in their *oblasts* and nationally
- RPM-Russia and seven lecturers from the Russian State Medical University conducted a series of clinical pharmacology lectures for 140 physicians from Novgorod and Pskov *oblasts*
- Four Ryazan Oblast officials participated in a “Health System Overview Study Tour” in Texas. Visits to hospitals reinforced the importance of drug formularies and accelerated the formulary development process at the Ryazan Oblast Clinical Hospital. Likewise, exposure to US buying groups accelerated the formation of a Ryazan Oblast tender committee
- Seven Ryazan and Novgorod officials received advanced training in formulary development, and orientation to drug use review (DUR), use of drug information databases, and desk-top publishing, during a US study tour in Tucson, Arizona, and Arlington, VA. The tour facilitated acceptance of DUR as part of the drug selection process
- Eleven health professionals from Ryazan, Pskov, and Novgorod *oblasts*, and Moscow participated in a Community Pharmacy Management Study Tour in Michigan. The tour highlighted established and innovative US pharmacy practices
- An “Advanced Pharmacy Management Workshop: Your Business Plan,” was conducted in Ryazan Oblast for 27 participants. Participants evaluated options for management refinements, and 12 pharmacy directors have written their own business plans. The demonstration-site role of Ryazan was employed by including two pharmacists from Novgorod and Pskov to attend the workshop
- RPM-Russia, *oblast* officials and specialists, and Moscow experts have presented project accomplishments at three Man and Drugs Congresses in Moscow
- RPM-Russia has conducted four “Formulary Development Workshops” in Moscow and Novgorod, training approximately 160 specialists from RPM-Russia, *ZdravReform*, and AIHA *oblasts*. One Drug Use Review (DUR) Workshop has been conducted for 60 specialists
- RPM-Russia conducted a lecture on “Cost Effective Drug Selection” for 200 medical students at the Ryazan Medical University. The university Pharmacology Department adapted the lecture and presented it as a three-hour lecture for 144 physician interns. It has been incorporated into the medical school curriculum, and used in the Information Education Center opened with USP support
- RPM-Russia trained Ryazan Medical University faculty in use of drug information software, and Ryazan Oblast Clinical Hospital staff in use of formulary development software

Tools' Development

- The MSH 1993-1994 *International Drug Price Indicator Guide* was translated into Russian and distributed to every Russian *oblast*

- Existing MSH pharmaceutical management training materials, including the *Managing Drug Supply* training series, have been adapted and translated into Russian, and used in numerous training activities
- New training materials have been developed. The project has Russian language materials that can be used in training programs on indicator based assessments, drug procurement, community pharmacy management, formulary development, drug use review, and rational prescribing
- RPM-Russia adapted and translated the MSH pharmaceutical sector assessment indicator manual (*Rapid Pharmaceutical Management Assessment: An Indicator-Based Approach*) into Russian
- Based on experience gained in Ryazan, RPM-Russia created the *Manual for the Development and Maintenance of Hospital Drug Formularies*. The manual is geared toward hospital administrators and operational level personnel, to enable them to understand the goals of formulary systems, and the steps involved in implementation and maintenance
- As a companion volume to the *Manual for the Development and Maintenance of Hospital Drug Formularies*, RPM-Russia wrote the *Guidelines for Implementing Drug Utilization Review Programs in Russian Hospitals*
- In cooperation with WHO, RPM-Russia adapted and translated the *WHO Guide to Good Prescribing* into Russian
- As a result of community pharmacy management training activities, RPM-Russia wrote a *Community Pharmacy Management Manual*
- RPM-Russia designed a tool for collecting financial information to perform financial analysis of retail pharmacies
- INVEC-2, the MSH inventory management software program, has been translated for use in Russia
- Russian/English language formulary computer software has been developed, and is in use at the Oblast Hospital in Ryazan

Technical Activities

- Key concepts not well understood in Russia, such as “formulary,” “drug information,” and “generic drug,” were discussed extensively and clarified with Moscow and Ryazan officials early in the project. This clarification was an important prerequisite for further technical work. The process facilitated introducing these concepts in other *oblasts*
- In July 1995, the Ryazan Oblast Clinical Hospital approved a limited drug list as part of its formulary system. Implementation resulted in the removal of 1,500 costly, unsafe and ineffective drug products. As a result, the Oblast Public Health Committee formed a Formulary Department responsible for overseeing the implementation of drug formularies in all hospitals in the *oblast*

- Ryazan Oblast Clinical Hospital created a formulary manual based on its limited drug list. The manual contains drug monographs and information to improve prescribing.
- A mini-tender for human insulin was conducted in Ryazan Oblast, resulting in cost savings of approximately \$585,526.
- Twelve private sector community pharmacies that developed business plans during an RPM-Russia "Advanced Pharmacy Management Workshop" performed significantly better than other pharmacies during recent accreditation inspections in 1996.
- Privatization efforts have been supported through an RPM-Russia study of *oblast* drug pricing policies.
- As a result of the "Health System Overview Study Tour," the Deputy Governor of Ryazan Oblast implemented a reformed system of providing prescription services to exempt patients. The *oblast* has identified six *oblast* pharmacies which will fill prescriptions for all exempt patients.

Information Dissemination

- Russian people have been exposed to rational pharmaceutical management concepts as a result of
 - ▶ Newspaper articles
 - ▶ Magazine articles in the nationally distributed *Pharmacia Journal*
 - ▶ Articles in the *Pharmaceutical Gazette*
 - ▶ An article in *Chief Physician Magazine*
 - ▶ RPM-Russia appearances on Russian television programs
 - ▶ Radio interviews
 - ▶ A televised press conference

An article on the formulary development activity was published by the *Journal of the American Society of Health-System Pharmacists*, and a paper on formulary development was accepted for presentation at the 1997 National Council for International Health (NCIH) Conference on Building Strategic Alliances for Global Health.

- Wide dissemination of information on formulary development, DUR, and rational prescribing has already occurred. The *Manual for the Development and Maintenance of Hospital Drug Formularies* has been distributed at two Man and Drug Congresses, three formulary workshops, one DUR workshop, and major meetings held by Abt Associates and AIHA.
- RPM-Russia has developed basic packages of technical activities in Ryazan in formulary development, drug use review, rational prescribing, and community pharmacy management for use in other *oblasts*. The formulary and DUR packages have already been extensively used in the three project *oblasts*. These basic packages will be the basis for dissemination activities.
- Abt Associates has provided funds for reproduction of the RPM-Russia formulary, DUR and rational prescribing manuals. Two-thirds of the copies will be distributed through the Kaiser Permanente International Project, and one-third through RPM-Russia.

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Equipment

- RPM-Russia has provided computers to the Ryazan Medical University, Ryazan Oblast Hospital, and the Department of Health of Pskov Oblast

6 Constraints Encountered and Program Adjustments

- Start-up activities and assessments were initially met with skepticism due to Russian health care providers being “over assessed” during the initial years following the collapse of the Soviet Union. RPM-Russia created interest in the process by heavily involving Russian officials and specialists in all aspects of the assessment.
- The idea of drug formularies were, at first, seen to be in conflict with the atmosphere of freedom of choice that followed centralized control. RPM-Russia spent considerable time discussing the clinical and economic benefits of formularies with Russian counterparts, and enlisted US specialists to make key presentations at early activities.
- Initially, Russians expressed concerns that the motivation behind assistance in pharmaceutical reform was to promote the use of drugs produced by US companies. These concerns decreased over time, partially because the RPM-Russia-introduced formulary development process involves drug selection only by generic name.
- The project’s original design was to develop one demonstration *oblast*, followed by rollout into five additional *oblasts*. Due to the high level of enthusiasm expressed on all administrative levels and by clinicians and academics, the project is now focussing on leveraging resources from other USAID-funded projects, as well as on dissemination activities on the national level.

7 Likely Needs After End of Project (EOP)

- RPM-Russia developed methodologies and materials almost completely at the *oblast* level. Although Moscow-based academics and technical experts have been involved with the project since its beginning, there has been minimal participation by the Ministry of Health or the Ministry of Finance. If Russia-wide implementation of formulary systems is to occur, RPM-Russia must increase its visibility and activities at the federal level in order to identify or develop advocates and change agents.
- Russian public health officials in all three RPM-Russia *oblasts* have expressed interest in applying the drug selection, and monitoring and evaluation principles introduced through the project within the evolving system of medical insurance. It is unlikely that RPM-Russia will have the resources or time to adequately address these requests before the end of the project. It is almost certain that every *oblast* in Russia will be interested in these activities.
- RPM-Russia has already begun dissemination activities through a variety of mechanisms, such as publications, participation in meetings, and distribution of manuals. The interest expressed by the recipients clearly indicates that there is great demand for RPM-Russia materials and information. This interest, and the large number of administrative units (*oblasts*) within Russia, indicate that the need for dissemination activities will exist long after the end of the project.

- All three RPM-Russia *oblasts* intend to implement *oblast* formularies to ensure that only safe and effective drugs are being used in their health facilities. Another strong motivation for creating *oblast* formularies is the desire on the part of officials to reduce the acquisition cost of drugs through tenders and pooled procurement. Because of the lack of funds in *oblasts* to-date, RPM-Russia has not been able to assist in these activities.
- RPM-Russia has engaged in collaborative activities with international organizations such as the World Health Organization, Abt Associates, the American International Health Alliance, and Kaiser Permanente International, and has had an even greater number of Russian partners. It would be desirable for RPM-Russia to continue working with collaborating organizations whose activities will continue beyond the end of the project.

8 Key Documents and Products

Armstrong, E P , A Bykov, and A V Savelli *Introducing Formulary Drug Selection In Russia* AJHP 1996, 53 426-8

Duzey, O M , and H B Desai *Guide to Successful Management of Community Pharmacies* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, January 1997 (draft)

Management Sciences for Health/Rational Pharmaceutical Management Project *Rapid Pharmaceutical Management Assessment An Indicator-Based Approach* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, September 1995 (Russian edition)

Moore, T M , A Bykov, A V Savelli, and A Zagorski *Guidelines for Implementing Drug Utilization Review Programs in Russian Hospitals* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, September 1996

Moore, T M *Drug Utilization Review Workshop Proceedings Ryazan Oblast* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, September 1996

Moore, T M *Conference Proceedings Novgorod and Pskov Oblasts Policy Options Workshop* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, March 1996

Moore, T M , A V Savelli, H O Schwarz, A Zagorski, K Burimski, and O Solovieva *Novgorod Oblast Pharmaceutical Sector Assessment* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, November 1995

Moore, T M , A V Savelli, H O Schwarz, A Zagorski, K Burimski, and O Solovieva *Pskov Oblast Pharmaceutical Sector Assessment* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, November 1995

Sallet, J P *Formulary-R Software* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, September 1995

Savelli, A V , H O Schwarz, A Zagorski, and A Bykov *Manual for the Development and Maintenance of Hospital Drug Formulary Systems* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, February 1996 (Russian edition), April 1996 (English edition)

Savelli, A V *Conference Proceedings Ryazan Oblast Policy Options Workshop* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, December 1994

Savelli, A V , J P Sallet, A Zagorski, O Duzey, and H Haak *Ryazan Oblast Pharmaceutical Sector Assessment* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, November 1994

Schwarz, H O , A V Savelli, and E P Armstrong *Drug Formulary Development in the Newly Independent States* Submitted to the Annals of Pharmacotherapy January 1997, in press

Schwarz, H O *Proceedings for the Workshop on the Development and Maintenance of Hospital Drug Formularies, Khilovo* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, May 1996

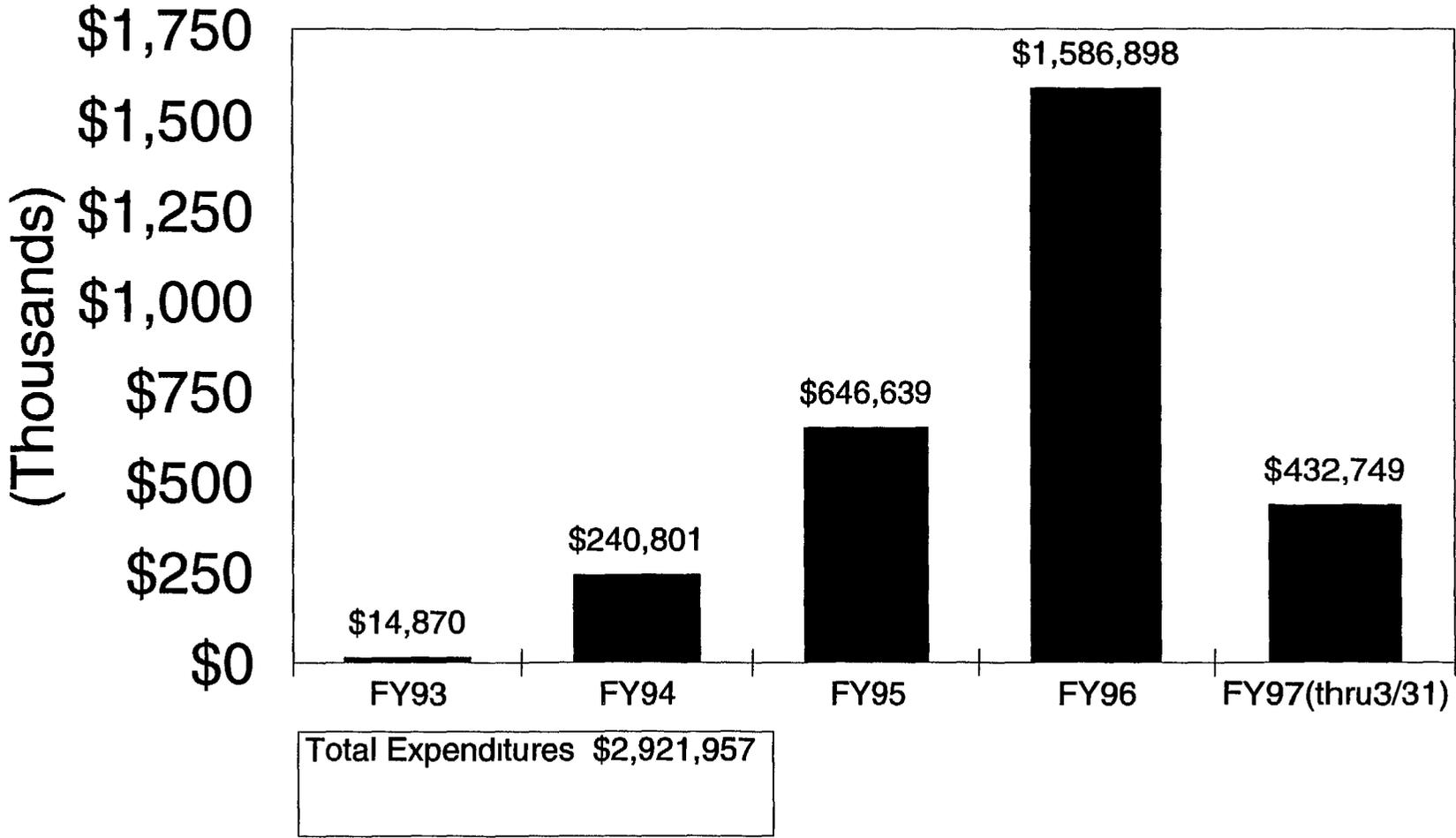
Schwarz, H O *Proceedings for the Workshop on the Development and Maintenance of Hospital Drug Formularies, Moscow* Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, February 1996

9 Inputs

Below is a graph depicting the RPM-Russia expenditures by year, for the program. The graph also provides the total expenditures and/or allocations for the program. Following that is a table illustrating the level of effort, in months, or RPM-Russia staff and consultant time. The second table summarizes the inputs into the program by RPM-Russia and other projects and organizations.

RPM Expenditures by Year

Russia



RPM-Russia Level of Effort

Russia

Person Months thru 3/31/97

MSH Staff*	163 5
Consultants*	7 9
Total	171 4

* Assumes 7 5 hrs/day and 22 days/month

Other Inputs

Russia

Thru 3/31/97

<u>RPM-Russia</u>	<u>Description</u>	<u>Value</u>
Subcontracts	Texas Assoc of Community Health Centers study tour	\$11,681
	University of Arizona study tour facilitation	\$12,823
	Michigan Pharmacists Ass study tour facilitation	\$22,126
	MIX Russian adaptation of INVEC-2	\$4,500
Equipment	2 computers, peripherals	\$5,477
<u>Other USAID*</u>		
Abt, Assoc	Reproduction of RPM-Russia manuals	
AIHA	Formulary Development workshop	
AED	Drug Information and Use workshop	
AED	Health Care Delivery and Pharmaceuticals Private Sector (I)	
AED	Health Care Delivery and Pharmaceuticals Private Sector (II)	
AED	Pharmaceutical Management and Training workshop (May 95)	
AED	Pharmaceutical Sector Management and Training (Jul 96)	
PIET	Issues in Pharmaceutical Management (Nov 93)	
PIET	Issues in Pharmaceutical Management (Mar 94)	
<u>Other Donors*</u>		
Pharmedinfo	Logistics and drug information support	
WHO	Integration of Rat'l Prescrib Pract in Med Undergrad Curricula	

* Non RPM-Russia contributions are estimates

B Recently Underway or Incipient Activities

Ukraine

In addition to work in Russia, the NIS add-on program description called for a limited program in one other NIS country, as determined by USAID. The limited program of activities, as originally proposed, included

- a reconnaissance visit,
- a workshop on "Current Priorities in Pharmaceutical Policy and Management" to introduce policy makers to RPM-Russia concepts, and
- a pharmaceutical sector assessment, with policy options analysis

RPM-Russia conducted a reconnaissance visit to Kazakhstan in February 1994, and although pharmaceutical sector problems that could be addressed through RPM-Russia appeared to exist, a formal request to proceed did not follow.

RPM-Russia's involvement in Ukraine began with an assessment conducted in November 1993, following a World Bank request to USAID/Kiev. Due to various local circumstances, the World Bank follow-up activity was never launched and there was limited interest in RPM-Russia involvement by the USAID/Kiev mission. In 1996, there was renewed interest in developing a RPM-Russia program, resulting in an RPM-Russia reconnaissance visit in November 1996. At that time, the ENI bureau selected Ukraine as the second NIS country for RPM-Russia involvement.

Because the problems in the pharmaceutical sector in Ukraine are well known by the MOH and USAID/Kiev, the mission requested that RPM-Russia begin activities by attending a conference on health reform issues in Yalta from 25-30 May 1997, under the auspices of the Ukrainian Ministry of Health. The conference was attended by heads of Oblast Health Administrations from almost all *oblasts* of Ukraine. Main session topics included health insurance implementation, challenges in health care finance, accreditation of hospitals and other health care facilities, drug supply, and the drug market. RPM-Russia delivered a presentation on "Problems in Drug Management and Approaches to Their Successful Resolution."

Based on the initial reconnaissance visits, and participation in the conference, it is likely that RPM-Russia will implement a program that includes

- Formulary system implementation workshops,
- Lectures on clinical pharmacology,
- Technical assistance to hospitals implementing formulary systems,
- Distribution of RPM-Russia tools developed in Russia,
- Curricular reform at the National Medical University of Ukraine, and
- Technical assistance to community pharmacies in procurement

Some of these activities may be planned and carried out in cooperation with the USAID-funded AIHA Hospital Partnership Project and the Abt Associates *ZdravReform* Project

XI MODES OF OPERATION

I Training

Title of the Training Activity	Content and Main Objective	Number of Participants	Date
Pharmaceutical Sector Assessment	Collection of Indicator Data	24	May 1994
Practical Pharmacy Management Workshop	Clinical Pharmacy, Medical Insurance, Drug Information, Pharmacy Management Follow-on to US-based training period through AED	49	May 1995
Health Systems Overview Study Tour	General overview of US health systems, with focus on pharmaceutical sector	5	June 1995
Advanced Pharmacy Management Your Business Plan	Business plan implementation in community pharmacies	26	September 1995
Formulary Development	Introduction to formulary systems	26	September 1995
Rapid Pharmaceutical Indicator Assessments	Use of indicators in pharmaceutical sector assessments	17	September 1995
Clinical Pharmacology	Drug information needed for work of formulary committees	140	November 1995
Formulary Development	Implementation of formulary systems	68	February 1996
Pharmacy Management Intensive Implementing Plans for the Future	Advanced business plan implementation	15	March 1996
Formulary Development	Implementation of formulary systems	61	May 1996
Drug Utilization Review	Implementation of DUR programs	60	September 1996
Formulary Development	Implementation of formulary systems in AIHA partnership hospitals in Russia and the NIS	21	February 1997

Title of the Training Activity	Content and Main Objective	Number of Participants	Date
Rational Prescribing Workshop	Reform of medical school curricula based on WHO <i>Guide to Good Prescribing</i>	60	May 1997

2 *Assessments*

Dates	Where	Why	Scope of the Assessment
May - October 1994	Ryazan Oblast	Little information was available prior to this assessment, basis for work plan, build stakeholders	Done in one oblast, but some federal level information was gathered, indicator, quantitative and qualitative information obtained
November - December 1995	Novgorod Oblast	Basis for rollout oblast work plan, build stakeholders, obtain information on emerging insurance systems	Less in-depth than Ryazan assessment, indicator portion was done entirely by local specialists
November - December 1995	Pskov Oblast	Basis for rollout oblast work plan, build stakeholders, obtain information on emerging insurance systems	Less in-depth than Ryazan assessment, indicator portion was done entirely by local specialists

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3 *Policy Dialogue*

Location	Content	Dates
Ryazan Oblast	Project overview, review assessment findings, writing work plans for formulary development, procurement, drug information, and pharmacy management	November 1994
Novgorod and Pskov Oblasts	Project overview, review assessment findings, write work plans for formulary development, rational use/drug use review, procurement, pharmacy management, and drug information	March 1996

4 *Studies and Operations Research*

Title of the Study	Dates	Status
Treatment of Bronchial Asthma in Novgorod Central Oblast Hospital	June 1996	Prescribing patterns and costs of treatment presented to Chief Pulmonologist
Treatment of congestive heart failure and essential hypertension at the Pskov Oblast Veterans' Outpatient Clinic	June 1996	Prescribing patterns and costs of treatment presented to Clinic Director

5 *Improved Information Management*

Description of Activities	Software Used	Dates
INVEC-2 was adapted and translated into Russian, however, local conditions in Ryazan prevented installation	INVEC-2	1995-1996
An English-Russian language database program was developed for formulary implementation and maintenance	Formulary-R	1995-present
Computer software was used to collect information on drug prescribing as RPM-Russia began work in DUR	PASS	June 1996

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6 *Collaboration*

Collaborator	Nature of Collaboration	Dates
Pharmedinfo	Initial Russia assessment	1994
Pharmedinfo	Participation in all major conferences and workshops, logistical support	Ongoing
Partners in International Education and Training	US course on "Issues in Pharmaceutical Policy and Management for Russians"	November 1993
Partners in International Education and Training	US course on "Issues in Pharmaceutical Policy and Management for Central Asians"	March 1994
Academy for Educational Development and Howard University	US course on "Drug Information and Use"	1994
Academy for Educational Development and Howard University	US course on "Health Care Delivery and Pharmaceuticals Private Sector Management"	1994
Academy for Educational Development and Howard University	US course on "Health Care Delivery and Pharmaceuticals Private Sector Management"	1994
Academy for Educational Development	AED support for RPM-Russia workshop on DUR	September 1996
Academy for Educational Development and Howard University	Course on "Pharmaceutical Sector Management and Training"	July 1996
Texas Association of Community Health Centers	"Health Systems Overview Study Tour"	June 1995
University of Arizona	"Formulary Development Study Tour"	October 1995
Russian State Medical University	Course in "Clinical Pharmacology"	November 1995

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Collaborator	Nature of Collaboration	Dates
Michigan Pharmacists Association	"Community Pharmacy Management Study Tour"	August 1996
Abt Associates	Abt sponsorship of participant to RPM-Russia Formulary Workshop	February 1996
Abt Associates	Inclusion of RPM-Russia <i>Manual for the Development and Maintenance of Hospital Drug Formulary</i> on Abt produced CD ROM	1996
Abt Associates	RPM-Russia participation in Abt conference on Health Reform in Russia-Experience in Russian-American Cooperation	November 1996
Abt Associates	Reproduction of three RPM-Russia manuals	June 1997
American International Health Alliance	RPM-Russia participation in AIHA conference in Iowa	October 1996
American International Health Alliance	Joint workshop on Formulary Development	February 1997
World Health Organization	Adaption of <i>WHO Guide to Good Prescribing</i>	1996
World Health Organization	Joint workshop on "Integration of Rational Prescribing Practice in Medical Undergraduate Curricula in the NIS"	May 1997

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XII SUPPORT FOR USAID STRATEGIC OBJECTIVES

The RPM-Russia Project supports the same set of USAID strategic objectives discussed in the RPM-Worldwide part of this briefing book

- **SO1** Increased use by women and men of voluntary practices that contribute to reduced fertility
- **SO2** Increased use of safe pregnancy, women's nutrition, family planning and other key reproductive health interventions
- **SO3** Increased use of key child survival and health interventions
- **SO4** Increased use of proven interventions to reduce HIV/STD transmission

Each SO contains a number of related results. Specifically, RPM-Russia Project technical activities address the following types of results

- improved availability of services
- improved quality of services
- improved access to services
- new approaches and technologies/cost effective interventions
- improved policies
- enhanced knowledge of practices and interventions

Activities in the first three results areas, related to access, availability, and quality of services, can result in direct and immediate improvement in patient care. A brief description of RPM-Russia's technical areas, and how they support these three results areas follows

Drug Selection/Formulary Development

The main goal of activities undertaken under the formulary development technical area is for health care facilities to procure and use only drugs that have been shown to be safe, efficacious, and cost effective, resulting in improved quality of care. Use of the most cost effective drugs will help to improve the availability of vital drugs

Drug Use Review

Selecting and procuring safe, efficacious and cost effective drugs does not guarantee proper use by physicians, pharmacists, nurses, or patients. The RPM-Russia Drug Use Review component is designed to give health care facilities the tools and information needed to identify drug use problems and design and implement interventions that result in improved prescribing and use of drugs

Drug Procurement

The procurement technical activity is designed to assist *oblasts* in implementing tendering and pooled procurement activities. Successful implementation will lead to improved drug quality, and lower prices, which will help to ensure availability of formulary drugs

Community Pharmacy Management

The majority of outpatient prescriptions written in RPM-Russia *oblasts* are filled in community pharmacies, many of which have been privatized. The Community Pharmacy Management component has helped to increase the economic viability of these pharmacies through management training. Supporting the pharmacy network helps to ensure the availability of drugs for ambulatory patients.

Rational Drug Use

Drug Use Review programs often reveal problems with physician prescribing, such as prescribing a drug when it is not indicated, or prescribing in sub-therapeutic doses. As with drug selection, inappropriate prescribing can have both negative financial and clinical implications. The RPM-Russia Rational Drug Use component, which involves training based on the WHO *Guide to Good Prescribing*, is designed to improve prescribing by physicians.

Contributions by SO and Result

The results areas listed above are each included in more than one of the SOs. SO3, Increased use of key child health and nutrition interventions, will be used to illustrate how RPM-Russia supports the objective.

SO3 PO3 1 New and improved cost effective interventions developed and disseminated

- In order to rationalize selection of drugs, RPM-Russia developed drug formulary development methodologies and training materials based on extensive experience working at the Ryazan Oblast Clinical Hospital. Building on this experience, RPM-Russia conducted workshops for specialists from its *oblasts*, and established formulary committees in 59 hospitals. At the largest workshop, separate training in drug selection was provided by medical university professors for specialists from the children's hospital.
- Drug Use Review programs, where drug prescribing and use are measured against predetermined criteria with the goal of identifying opportunities for improvement, were previously unknown in Russia. RPM-Russia conducted DUR evaluations in inpatient and outpatient facilities in Novgorod and Pskov *oblasts* and developed a DUR manual and workshop. One workshop has been conducted.
- The MSH Prescription Analysis Software System (PASS) was beta tested in two Russian health care facilities. Based on this test, the software was adapted and upgraded to include reports of clinical prescribing data for use in DUR evaluations. The software has been made available to hospitals in Novgorod, Pskov, and Ryazan as an alternative to manual data collection in DUR evaluations.
- RPM-Russia completed an adaptation and translation of the WHO *Guide to Good Prescribing* into Russian. The first workshop in which the manual was used was held in May 1997.

SO3 PO3 2 Improved policies and increased global, national and local resources for appropriate child health interventions

- The Ryazan Oblast Public Health Committee established a department responsible for overseeing the implementation of drug formularies in all *oblast* hospitals. Technical oversight is the responsibility of the Ryazan Oblast Clinical Hospital Drug Information Center, established through the USP RPM-Russia Project
- Drug formulary system and DUR program implementation are included in the official Public Health Plans in Novgorod and Pskov Oblasts
- Ryazan Oblast established a Drug Tender Committee to reduce procurement costs through use of competitive techniques
- Lectures on rational drug use, formulary development, and use of unbiased drug information have been officially adopted for use in the medical and pharmacy school curricula at the Ryazan Medical University
- In Novgorod, a public health law was recently passed ordering the formation of *oblast* and hospital formulary committees, and drug information centers

SO3 PO3 3 Enhanced knowledge of key child health and nutrition behaviors/practices in selected countries

- RPM-Russia conducted a three-week training course in clinical pharmacology for members of formulary committees from children's hospitals and hospitals with children's wards
- Russian language training materials developed for RPM-Russia workshops on indicator-based assessments, formulary development, DUR, and community pharmacy management are available for future use by Russian counterparts
- At the Ryazan Medical University, educational materials have been developed on principles of rational drug use, formulary system development, and DUR. Lectures are provided for medical students, interns, physicians, pharmacists, nursing, medical and pharmacy school faculty
- Based on experience gained in Ryazan Oblast, RPM-Russia developed and has widely disseminated a Russian language *Manual for the Development and Maintenance of Hospital Drug Formularies* in Russian language. The manual provides step-by-step instructions on implementing and maintaining drug formulary systems, which result in rational selection and use of drugs
- RPM-Russia developed the manual *Guidelines for Implementation of Drug Utilization Review in Russian Hospitals*. The manual is a companion to the *Manual for the Development and Maintenance of Hospital Drug Formularies*, and provides instruction to hospital specialists on how to establish ongoing programs to monitor drug use, and develop and implement interventions when drug use problems are identified
- RPM-Russia, in cooperation with WHO, adapted and translated the WHO *Guide to Good Prescribing* to rationalize prescribing practices in Russia

- Formulary development software has been developed in English and Russian languages, and is in use at the Ryazan Oblast Clinical Hospital. The software was used to build a database of information on drugs commonly used in Russia.
- RPM-Russia has conducted symposia and round table sessions at three annual Man and Drugs Congresses in Moscow. In 1997, reports concentrated on accomplishments in formulary development, DUR, procurement, and community pharmacy management.
- RPM-Russia participated in the American International Health Alliance (AIHA) Conference on Women's Health in Des Moines, Iowa. RPM-Russia made a presentation on "Clinical and Pharmacoeconomic Aspects of Cost Effective Drug Selection."
- MSH participated in the USP "Drug Information for Health Care Professionals Workshop," held in Moscow in June 1997, by conducting a workshop on the "Use of Drug Information in Formulary Development and DUR."

SO3 PO3 4 Improved quality and availability of key child health/nutrition services

- Formulary committees have been established in 59 hospitals in RPM-Russia *oblasts*. The main goal of these committees is to ensure that safe, effective drugs are available in hospitals. The DUR component of formulary systems is designed to identify and correct drug use problems.
- RPM-Russia conducted a High Level Technical Meeting for physicians and pharmacists from 47 Ryazan, Novgorod and Pskov hospitals to enhance existing formulary development and DUR programs. A Russian pediatrician was used as an RPM-Russia consultant at this meeting to work with specialists from children's hospitals.
- RPM-Russia's pilot site for DUR, the Ryazan Oblast Clinical Hospital, conducted an evaluation of antibiotic prescribing and use, and concluded that usage was inappropriate in 23% of cases. An educational program was developed and conducted.
- Drugs are made available to ambulatory patients in Ryazan Oblast through its system of community pharmacies. Twelve pharmacies in Ryazan that developed business plans after attending RPM-Russia workshops performed significantly better than other pharmacies during annual accreditation inspections.
- Twelve physicians and pharmacists from Moscow, Ryazan, Novgorod, and Pskov *oblasts* participated in a community pharmacy management study tour in Michigan. The participants saw first hand how state-run programs and associations affect the practice of community pharmacy.

XIII PROJECT MANAGEMENT

A Organization for Implementation

The RPM-Russia project has gone through two phases of organization the initial phase when the project was being implemented only under the add-on to the RPM-Worldwide CA, and the current, expanded phase under the Russia CA

Add-on

In the initial phase, a full-time Arlington-based project manager and support staff member were responsible for all aspects of implementation, which included reconnaissance visits, the initial assessment/policy options workshop, and technical assistance. A combination of RPM-Worldwide CA technical staff members and consultants were used. One full-time Russian staff member, working as an outside service contractor, was responsible for local logistics support, including locating interpreters for visiting technical staff. Pharmedinfo, RPM-Russia's official collaborating organization provided limited logistics and technical support.

Under the add-on, RPM-Russia proposed to identify and support an existing Russian organization with expertise in pharmaceutical management. It was hoped that this organization would provide additional support services and participate in technical implementation. As mentioned previously, no such an organization was found, and the situation was addressed through the Russia CA, as described below.

Russia CA

When the Russia CA was awarded, two full-time Arlington-based technical staff were added, and given substantial responsibility for technical implementation. Consultants were used to a limited extent. As activities in rollout *oblasts* began, the decision was made to make each staff member responsible for a specific technical area, rather than designate "*oblast* managers."

Since a suitable Russian organization was not identified to assist in project implementation during the initial phase, RPM-Russia proposed to develop an organization under the Russia CA. As a first step, a Moscow office was opened. The outside service logistics provider mentioned above was hired as an MSH employee, and three additional outside service personnel were added: an office manager, and two physicians. Through the use of the Moscow office staff, Russian consultants, and oblast specialists as trainers and TA providers, the Arlington office staff has been substantially reduced as a cost savings measure.

The Moscow office manager has been trained in the US and in Russia in workshop planning and management, logistics support, accounting, and financial management. She has also gained experience working with USAID and with local and foreign organizations involved in pharmaceutical management. An RPM-Russia Arlington office support staff member visited the Moscow office twice to provide training, and draft a *Moscow Office Policy and Procedure Manual*.

Local technical staff have been trained in assessment methods, workshop planning, technical assistance methods, report writing, and use of RPM-Russia software.

RPM-Russia has not taken steps toward making this organization a legal entity in Russia for several reasons. Most significantly, the first Russian "law on NGOs" was passed only a few months ago, and the financial/tax implications of the new law are unclear. Minimally, if a legal organization is formed, 46% of any funds received from MSH in the form of a subcontract agreement would be paid to the Russian government as taxes. Doing so would require a substantial decrease in the amount of technical work done.

B Financial Management

- 1 **Funding** Russia activities are funded through three obligations \$650,000 through an OYB transfer, \$1,940,732 through the NIS add-on, and \$2,374,264 through the RPM-Russia cooperative agreement

- 2 **Financial Controls** RPM-Russia maintains a system of tight financial controls All procurements are made through a system that ensures open and free competition, cost comparisons, compliance with source and origin requirements, and sound business practices The system ensures that all expenditures are allowable, attributable to their respective projects, and reasonable Every expenditure receives prior signature approval by the appropriate project manager RPM-Russia procurement procedures are documented in the *DMP/RPM Standard Operating Procedures* manual RPM-Russia procurements also fall under MSH's organizational standards that are documented in the *MSH Employee Handbook* and are enforced by the MSH Finance Office

- 3 **Reporting** As required in the RPM and RPM-Russia cooperative agreements, RPM-Russia routinely submits a number of reports to the RPM-Russia CTO These include annual work plans, quarterly activity reports, annual progress reports, and trip reports The MSH Accounting Office submits the Financial Status Report (OMB SF-269) to USAID/M/FM/PAFD quarterly, this document shows government and recipient outlays over the life of the project

In addition to the program performance and financial reporting detailed above, RPM-Russia routinely produces financial reports that support program management To this end, RPM-Russia developed financial, accounting, and management information systems capable of tracking expenditures by source of funds, task, subtask, and geographic and technical area Financial reports typically include information such as funds obligated, project budgets, activity budgets, funding source, drawn down to-date, accruals, non-routine commitments, and balances available Pipeline analyses, which monitor projected expenditures with current funding, are also conducted on a regular basis

RPM-Russia ensures that financial and program performance information is at all times current and accessible to USAID bureaus and missions and to the RPM-Russia CTO RPM-Russia has been committed to responding quickly to any routine or *ad hoc* requests for information

- 4 **Administrative Management.** RPM-Russia has developed and implemented administrative systems that ensure its efficiency and effectiveness These systems are documented in the *DMP/RPM Standard Operating Procedures* manual They include procedures for routine office systems such as accounting, hardware inventory and maintenance, travel procedures, and standard filing systems

- 5 **Moscow Office Financial Management** Financial management of the RPM-Russia Project changed significantly with opening of the Moscow office before which funds were hand-carried to Russia by project staff members, and accounting was done through the travel expense reporting system. Once the office was established, MSH began to wire funds to Russia, which are kept in an office safe in the form of either US dollars or rubles, until used. All expenses paid from the office safe must be approved by either the Moscow Office Director or Project Director. Up-to-date balances for rubles and dollars are maintained on a spreadsheet program. Expenses are documented using an Accounts Payable Voucher form, a numbered receipt book, and actual receipts, when available. Outside Service Agreements are used for all work done by independent interpreter/translators. Moscow office staff members traveling outside of Moscow may receive travel advances, following procedures similar to those used for international travel. Office rent is paid by a bank-to-bank wire transfer.

ANNEXES

ANNEX ONE LIST OF ACRONYMS

ACF	Allocable Cost Factor
AED	Academy for Educational Development
AID	Agency for International Development
AIHA	American International Health Alliance
ARI	Acute Respiratory Infection
BASICS	Basic Support for Institutionalizing Child Survival
CA	Cooperative Agreement
CAIDP	Central Asia Infectious Diseases Program
CDP	Community Drug Program (Nepal)
CMS	Central Medical Store
CTO	Cognizant Technical Officer
DAP	Action Programme on Essential Drugs (WHO)
DD	Diarrheal Disease
DDA	Department of Drug Administration (Nepal)
DDM	Data for Decision Making Project
DIC	Drug Information Center
DILSAT	District Level Self-Assessment Tool (Zambia)
DINON	Drug Information Network of Nepal
DMP	Drug Management Program
DUR	Drug Use Review
ECDS	Eastern Caribbean Drug Service
EDL	Essential Drug List
EDP	Essential Drug Programme
EOP	End of Project
EPI	Extended Program on Immunizations
ERID	Emerging and Re-emerging Infectious Diseases
ESA	Eastern and Southern Africa
FPLM	Family Planning Logistics Management Project
FS	Field Support
GMP	Good Manufacturing Practices
HLMC	Health Learning Materials Center (Nepal)
HPN	Health, Population, and Nutrition (USAID)
IMCI	Integrated Management of Childhood Illnesses
INRUD	International Network for Rational Use of Drugs
JU	Jagiellonian University (Poland)
KAP	Knowledge and Practices
KfW	Kreditanstalt für Wiederaufbau (German aid agency)
LDC	Less Developed Country
LMD	Logistics Management Division (Nepal)
LMIS	Logistics Management Information System (Nepal)
MCH	Maternal and Child Health
MDR	Multi-Drug Resistant
MDS	<i>Managing Drug Supply</i>
MIS	Management Information System
MOH	Ministry of Health
MSH	Management Sciences for Health
MSL	Medical Stores, Ltd (Zambia)

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NCIH	National Council on International Health
NGO	Non-Governmental Organization
NIPHP	National Integrated Population and Health Program (Bangladesh)
NIS	Newly Independent States
OECS	Organization of Eastern Caribbean States
OR	Operations Research
ORS	Oral Rehydration Salts
OYB	Operational Year Budget
PAHO	Pan American Health Organization
PEI	Polio Eradication Initiative
PHC	Primary Health Care
PIET	Partners for International Education and Training
PO	Program Outcome
QA	Quality Assurance
RDU	Rational Drug Use
RECPHEC	Resource Center for Primary Health Care
REDSO	Regional Economic Development Services Office (USAID)
RH	Reproductive Health
RPM	Rational Pharmaceutical Management
SLGH	Strengthening Local Government in Health
SO	Strategic Objective
STD	Sexually Transmitted Disease
STG	Standard Treatment Guidelines
TA	Technical Assistance
TOT	Training of Trainers
URC	University Research Corporation
USAID	United States Agency for International Development
USP	United States Pharmacopoeial Convention
WHO/CHD	World Health Organization/Child Health Division
WR	WHO Representative

ANNEX TWO CVS

RPM - WORLDWIDE

JAMES A. BATES

EDUCATION

MA University of Wisconsin, History, 1972

BA University of Hawaii, History, 1968

PROFESSIONAL EXPERIENCE

Nineteen years working in drug management in developing countries Long-term positions in Afghanistan, Bolivia, Haiti, and Indonesia Short-term consultancies in Ecuador, Peru, Costa Rica, Honduras, Guatemala, Mexico, El Salvador, the Eastern Caribbean, Togo, Mali, Chad, Kenya, Zambia, Mozambique, Morocco, Tunisia, North Yemen, Bangladesh, Nepal, Pakistan, Poland, and Ukraine Substantial practical experience in operations research, project design, procurement and distribution, drug use, cost recovery, social marketing and training for improving drug management

February 1995 - Present

Management Sciences for Health
Washington, DC

Director, of the Rational Pharmaceutical Management (RPM) Project RPM is a Washington-based project funded through a cooperative agreement between USAID and Management Sciences for Health The project's overall goal is to assist developing countries in improving their pharmaceutical management systems Specific technical priorities include drug registration, procurement and inventory management, and drug information and rational drug use Funded at a level of \$16 million, and with ten full-time staff members, RPM has long-term programs operating in the Eastern Caribbean, Peru, Ecuador, Nepal, Bangladesh, Mozambique, and Zambia As Director, I am responsible for day-to-day project operations, including budgeting and financial management, recruitment, and overseeing program implementation for both Washington-based and country-level programs In addition to overall project management responsibilities, I am also directly responsible for program implementation in Nepal

1991 - 1992

Training Coordinator, for the MSH Drug Management Program Responsible for management of course offerings, supervision of teaching staff, and development of training materials Contributed to and edited training materials Two volumes published through UNICEF in 1991

A major responsibility was directing the WHO-funded Program for Improving Drug Sellers' Diarrhoea Treatment Practices For this innovative project, managed an interdisciplinary team of six specialists Objective was to develop approaches for engaging retail drug sellers as promoters of rational drug therapy for diarrhoea Project both promotes ORT, and discourages use of antidiarrheal drugs The team conducted assessments of the retail drug sectors in Kenya, Pakistan, Bangladesh and Indonesia Based on this work, the team developed a guide for designing and implementing training and social marketing interventions Following field tests in Indonesia and Kenya, the guide was published by WHO

1989 - 1990

Drug Management Consultant, worked as an at-large consultant for the MSH Drug Management Program, operating out of Dhaka, Bangladesh, during spouse's tour there with USAID Carried out short-term consultancies for USAID, WHO and UNICEF funded activities in Pakistan, Bangladesh, Indonesia, the Eastern Caribbean, and Honduras

1985 - 1989

Drug Management Advisor, to both the Ministry of Health and the USAID Mission to Indonesia On the Ministry side, worked in Sub Directorate for control of Diarrhoeal Diseases, responsible for assisting counterparts to develop ORS management strategies to accommodate increases in demand stimulated by social marketing activities This required both making direct technical inputs, and coordinating the work of a team of short term consultants Outputs included development of a standard "ORS management assessment package" for evaluating needs estimation, production, distribution and use of ORS in different provinces, major studies on commercial production of ORS, public-sector procurement of child survival pharmaceuticals, and prescribing patterns for major childhood diseases, training materials for improving ORS management, and an MIS for monitoring procurement and distribution of ORS

Working with the USAID Mission, responsible for advising Office and Health and Population on opportunities for working in drug management Principal achievement was designing the drug component of the bilateral Health Sector Financing Project This \$3.4 million program sought to rationalize management of drugs within the Ministry of Health system, so that maximum resources are allocated for child survival initiatives To achieve this objective, the Drug Component designed, tested and communicated strategies for improving selection, procurement, distribution and use of essential drugs

1980 - 1984

Drug Management Advisor to the Ministry of Health, Republic of Haiti Responsible for the design and implementation of a national drug sales program for essential drugs To help the Ministry deal with the high recurrent costs of its drug needs, worked with counterparts and short-term consultants to set up a public enterprise to manage procurement, distribution and sale of drugs and medical supplies Managed a varied range of technical activities including drafting enabling legislation, designing a revolving fund, managing procurements, staff training, and community organization

1979 - 1980

Drug Management Advisor to the Montero Primary Health Care Project The Montero Project was an attempt by the Bolivian Ministry of Health to develop a cost effective package of both facility-based and community-based primary health care services for rural areas Between 1976 and 1979, the project made good progress in recruiting and training various categories of health workers Efforts to provide these workers with basic drugs and medical supplies, however, had not been successful Assignment was to work with project staff and develop a practical distribution system to serve 15 rural health posts and 60 communities This required setting up a revolving fund to finance the drug supply and training health workers at all levels to manage the system

1977 - 1979

Drug Management Advisor to the Ministry of Health, Republic of Afghanistan Responsible for development of a program for rationalizing the distribution of drugs and medical supplies to the Ministry's 45 hospitals and 122 basic health centers Implemented improved procurement procedures, storage practices, and distribution schedules A major emphasis was a program for training Ministry staff at all levels in each of these areas of supply management

PUBLIC SERVICE

Peace Corps, Iran 1973-1975

U S Army, Germany 1969-1971

PUBLICATIONS AND CONFERENCE PRESENTATIONS

Bates, J A , "Better Treatment of Diarrhoea in Drug Stores " Washington National Council for International Health, June 1992

Bates, J A , D Ross-Degnan and S Soumerai "Guide for Improving Diarrhoea Treatment Practices of Pharmacists and Licensed Drug Sellers " Boston WHO funded project, December 1991

Bates, J A , D Ross-Degnan, and P L Foreman "The ORS Management Assessment Package," slide show presentation on field tests of a computer software program which evaluates prescribing practices for diarrheal disease Washington USAID Asia Near East Bureau, 1990

Bates, J A "Drug Supply in Kojast," in Managing Drug Supply Training Series, Part One Policy Issues in Managing Drug Supply Boston Management Sciences for Health, 1987

Cross, P N , M A Huff, J D Quick, and J A Bates "Revolving Drug Funds Conducting Business in the Public Sector " Social Science and Medicine, Vol 22(3), pp 335-343, 1986

Bates, J A and J D Quick "ORS Supply Management," in LeSar, J W , et al (eds) Manual for Assessment and Planning of National ORT Programs Boston Management Sciences for Health, 1985

Bates, J A "Doing Business in Primary Health Care Selling Essential Drugs in Haiti " Washington National Conference for International Public Health, June 1985

Managing Drug Supply, Chapters I C "Planning for Drug Supply," IV D "Design and Operation of Storage Facilities," and IV E "Delivery Strategies " Boston Management Sciences for Health, 1981

Bates, J A , A F Hartman, R W O'Connor, J D Quick, and P J Roussele "Procurement and Use of Drugs Managing the Process to Advantage " In Zatuchi, G I (ed) Vaginal Contraception New Developments, pp 325-355 New York Harper and Row, 1979

LANGUAGE SKILLS

Persian	Good
Spanish	Good
French	Fair
Indonesian	Fair

COMPUTER SKILLS

Works effectively with published word processing, spreadsheet and graphics software, and special applications software for drug management

HONORS

Phi Beta Kappa

May 1997

ELVIRA BERACOCHEA

EDUCATION

- Master of Public Health SCHOOL OF PUBLIC HEALTH AND COMMUNITY MEDICINE,
HADASSAH, HEBREW UNIVERSITY, JERUSALEM, ISRAEL 1986-1987
Major in Health Service Administration and Community Medicine
MPH Thesis Title The Cognitive Functions of the Elderly in the
Community
- Doctor in Medicine SCHOOL OF MEDICINE, UNIVERSITY OF THE REPUBLIC OF URUGUAY
1977-1984 MONTEVIDEO, URUGUAY

PROFESSIONAL EXPERIENCE

March 1995-present MANAGEMENT SCIENCES FOR HEALTH, DRUG MANAGEMENT PROGRAM
ARLINGTON, VA

Senior Program Associate Responsibilities include *Deputy Director of the Rational Pharmaceutical Management Project (RPM), management of activities in Latin America and central level activities At central level* Development of cost estimation approach for Reproductive Health Commodities, and technical support to the development of IMCI, HIV/AIDS and Polio Eradication drug management activities *At country level Program management* Preparation of country work plans and annual budgets, monitoring of USAID field support funding, development of terms of reference for short-term technical assistance staff, supervision of local staff, liaison with other donors and counterparts, editing and coordination of program documents production, and provision of overall technical direction *Public Sector* In Ecuador Development and Implementation of an Integrated Decentralized Drug Management System The system is instrumental in ensuring the efficient management (procurement, storage, distribution and use) of essential drugs for supporting the MOH's health programs and interventions at the district level The system is under trial in 8 districts Development of a Drug Needs Planning System for Hospital Drug Management to improve efficiency at Hospital level This system relies on the development of a rational and cost-effective hospital drug formulary In Peru Assisted in the design of a new Drug Logistics System at National and Regional levels *Private Sector* Revision and re-design of 20 NGO's drug revolving funds in Peru, and conduct of a study to identify health policy incentives for marketing generic drugs in private pharmacies in Nicaragua *Human Resource Development and Local Capacity Building In Ecuador* Planning and conducting workshops and coaching sessions for local counterparts and District Health Workers on Rapid Pharmaceutical Assessment adapted to Ecuador's Health System, Training of Trainers to conduct Rapid Pharmaceutical System Assessments, Decentralized Drug Management Systems at the District Level Workshop, and computerized drug inventory system (INVEC-2) *In USA* Planning and conducting of a twelve-week course on Drug Management and Information System for Indian Health Professionals *In Bolivia* Facilitator in an International Workshop on Rapid Pharmaceutical Management Assessment Methodology

May 1993-Feb 1995 HEALTH POLICY SECRETARIAT, DIVISION OF POLICY PLANNING AND EVALUATION, NATIONAL DEPARTMENT OF HEALTH
PORT MORESBY, PAPUA NEW GUINEA

Senior Policy Advisor - Planning Epidemiologist Duties included health policy development, strategic health planning, progress evaluation of the 5-year National Health Plan (NHP) and preparation of Departmental Annual Activity Reports Other responsibilities included *Evaluation* Planning and conducting the Mid-Term Evaluation of the NHP *Research* quantitative and qualitative studies for monitoring the implementation of key policy issues related to the NHP, for formulating new policies, and for assessing their impact on health care delivery in the areas of private health insurance, drug cost recovery, effectiveness of hospital boards, and cost-effectiveness of contracting out services to private companies and religious NGO's *Human resource development* Planning and implementation of training workshops in Health Systems Research, Strategic Planning, Monitoring and Evaluation, Quality Assurance and Epiinfo (epidemiological analysis software) *Management and Health Information Systems (MIS-HIS)* Revision of the MIS indicators for monitoring progress towards the national health objectives, and compilation and interpretation of HIS statistics for planning and reporting purposes *Coordination of Technical Assistance* Liaison with donors, identification of requirements for short-term assistance, development of consultants' scopes of work and monitoring to ensure the maximum benefit of their assistance *Health Promotion* Development and implementation of a school-based health promotion strategies to raise awareness of Non-communicable diseases risk factors in the South Pacific Region *Other duties* Participation in several Ministerial committees and Task Force Groups

May 1991-May 1993 DEPARTMENT OF COMMUNITY MEDICINE, MEDICAL FACULTY,
UNIVERSITY OF PAPUA NEW GUINEA PORT MORESBY, PAPUA NEW
GUINEA

Lecturer in Medical Statistics and Epidemiology Responsibilities included lecturing in Epidemiology and Biostatistics at under and postgraduate level, coordination of the *Postgraduate Diploma/Masters in Community Medicine Course*, curriculum evaluation and development and teaching of health statistics, epidemiology, health information systems, and health education and promotion in the first semester, and teaching of community health planning, decision-making, financing, monitoring and evaluation methods, and health facility management in the second semester *Research* Planning and conducting research on health needs of the aging population and the emergence of non-communicable diseases in PNG, and a study of the quality of care of rural health services (health centers and Aid posts) based on health facility and case management standards for IRA, Diarrhoeal Diseases, Malaria and Malnutrition In this study, the attitudes and motivations of rural health workers were also determined through questionnaires, observation and community focus group discussions The study report was the basis for developing a national human resource development strategy *Other duties* included planning and conducting health patrols with medical students to villages to conduct health situation diagnoses and provision of promotive, preventive and curative PHC services, and conducting a weekly outpatients urban clinic

1989-1991 DEPARTMENT OF PREVENTIVE AND SOCIAL MEDICINE, MEDICAL SCHOOL,
UNIVERSITY OF THE REPUBLIC OF URUGUAY
MONTEVIDEO, URUGUAY

Assistant Professor (Lecturer) Responsibilities included the planning and teaching of the new Master of Epidemiology course in the Department, lecturing on Survey methods and Epidemiological Surveillance, Epidemiology of Chronic Diseases and Aging, and Statistics, supervision of students' research projects and theses, and coordination of the Medical Journal Reading course in English in the Department

1988-1991 MEDICAL SCHOOL HOSPITAL, UNIVERSITY OF THE REPUBLIC OF URUGUAY
MONTEVIDEO, URUGUAY

Direction Assistant (Lecturer) This is a 900-bed hospital that is the national reference facility for tertiary care. It employs more than 3000 workers. The main duties included the administration of the Ambulatory Care Program of the Hospital, and carrying out the start-up of a new appointment system to reduce waiting lines and time. Other duties included carrying out operational research in different departments to identify the causes of low productivity and poor quality of care (Radiology Department, Medical Records Department, Social Services, Ophthalmology, Gynecology and Obstetrics, Nursing, Geriatrics, the Outpatient and Emergency Departments), coordination of the Permanent Education Committee and the Anti-Smoking Committee, representation of the University Hospital in the University Workers Health Insurance Committee, lectures in Hospital Administration in the postgraduate course, and participation in the preparation of the hospital's five-year development plan (1990-1994)

CONSULTANCIES AND OTHER PROFESSIONAL ACTIVITIES

Sept 6-8, 1995 RPM - Métodos para la Evaluación Rápida del Manejo de Medicamentos
Workshop Facilitator, Sta Cruz, Bolivia

Oct 1-15, 1995 USAID - BASICS Project Two-week consultancy to develop a *Monitoring and Evaluation Plan* for the APOLO Project in Ecuador. This is a project to support local NGO's to develop sustainable Child Survival models

1994 *National Health System Strengthening Programme*, Papua New Guinea
Chairperson of the departmental task force to plan the strengthening and unification of the national health system. Coordinated the national and provincial components

National Health Conference 9-13 May Chairperson of the organizing committee of this major policy making event. Prepared summary reports and recommendations of the conference discussions and edited the final report

Facilitator in Workshop on *Research priorities in Population and Family Planning* - UNFPA, Papua New Guinea

- 1993 *Mid-term review of the National Health Plan Workshop, Papua New Guinea* In charge of the organization of the workshop and planned all the group and individual activities, including participants logistics July, 1993
- Mid-term Evaluation of the Papua New Guinea-Child Survival Support Project-JSI-USAID* (20 days) Evaluation team member
- Member of the *Network of Public/Private Health Mix*, London School of Hygiene and Tropical Medicine Attended researchers' meeting, Jan 11-15, 1993, and conducted a multinational study in contracting out services in PNG
- 1992 *Ministerial Task Force* Appointed by the Minister of Health of Papua New Guinea to a task force to review the present health system and to make recommendations for policy change
- Quality assurance in Papua New Guinea* Facilitator in the first Quality assurance seminar in the area of hospital services Provided technical assistance to Port Moresby General Hospital in the area of medical records and hospital information systems

PUBLICATIONS

- 1996 Beracochea, E Contracting out of non-clinical services The experience of Papua New Guinea This paper is forthcoming in Bennett S, McPake B and Mills A *Private health providers in developing countries serving the public interest?* Zed Press
- Managing Drug Supply*, Chapter 17, Contracting for Drugs and Services 1996 Kumarian Press
- 1995 Beracochea, E, Dikson, R, Freeman, P, Thomason, J Case management quality assessment in rural areas of Papua New Guinea *Tropical Doctor*, 1995, 25 69-74
- Beracochea, E Audit of death certificates (In press)
- Beracochea, E Improving Postgraduate training in Community Health (In press)
- 1994 Beracochea, E Assessment of the well-being of the elderly in Papua New Guinea BOLD, Journal of the international Institute of Aging
- 1993 Beracochea, E, Vince, J Criteria Audit making use of existing data PNG Med J, vol 2 53-65,1993

RECENT REPORTS

- 1996 Beracochea E, Nelson D, Seltzer J Taller de Manejo Descentralizado de Medicamentos (Training of Trainers in Decentralized Drug Management) RPM, USAID-Ecuador
- Beracochea E, Grijalva Y Taller de Planificación de Medicamentos en Hospitales (Hospital drug needs planning workshop) RPM, UDAID-Ecuador
- 1995 Beracochea, E Contracting out in Papua New Guinea Submitted to the International Network in Public/Private Mix, Health Policy Unit, London School of Hygiene and Tropical Medicine / ODA
- Beracochea, E A school-based health communication project to raise awareness about NCD in PNG Submitted to the South Pacific Commission
- Beracochea, E, Olson, C Strengthening Revolving Funds and Assuring Quality Pharmaceutical Care Submitted to USAID/Peru
- Beracochea, E, Amadini, L, Vernengo, M, Rudisuhle, D, Palacio, J Feasibility Study of Marketing Generic Drugs in the private sector in Nicaragua World Bank
- 1994 Beracochea, E, Bass, C, Mulou, N Study of hospital efficiency and cost recovery in pharmaceuticals Research report submitted to USAID/RDO/SP, Suva, Fiji
- Beracochea, E, Udayan, R, Hiawalyer, G Non-communicable diseases and their risk factors in urban communities of Port Moresby Research report submitted to WHO Regional Office, Manila, Philippines
- 1993 Afo, G, Beracochea, E, Karel, S Report of the Mid-term Review of the National Health Plan 1991-1995 Port Moresby, Department of Health

LANGUAGES

Spanish - Native
 English - fluent
 French - good understanding, reading and writing skills, speaking fair
 Portuguese - good use of oral language
 Japanese - basic
 Melanesian Pidgin - good use of oral language

MARIA CHOMYSZAK

EDUCATION

MS Salve Regina University, Health Services Administration, 1993

BS Bryant College, Business Administration, 1985

PROFESSIONAL EXPERIENCE

1997 - present

Management Sciences for Health
Arlington, VA

Operations Manager, Drug Management Program (DMP) Coordinate administrative functions of the office Ensure that procedures and policies are standardized across projects Develop and implement office systems (standard operating procedures, file management), with a focus on contract compliance Coordinate staff meetings (agenda and meeting minutes) Act as time sheet coordinator Coordinate interoffice communications and communication between DMP and other programs/clients Provide office procedure, accounting, budget monitoring, and software training assistance, as required Manage maintenance of office equipment Recruit, supervise, train and manage support staff Oversee maintenance of journals library Maintain DMP accounting process (manage invoices, respond to vendor inquiries, reconcile actuals with accruals)

1996 - 1997

Analysis & Technology, Inc
N Stonington, CT

Management Support Specialist Technology and Advanced Systems Office, Naval Undersea Warfare Center Developed and maintained Intranet Web pages for Program Office Attended and documented project meetings Maintained file servers for program office and various projects Prepared briefs/presentations for senior Naval staff Supported program office strategic planning meeting

1996

Brenton Center, Adult Day Care Center, Inc
Newport, RI

Director Worked collaboratively with Board of Directors to establish this new entity Established systems and procedures for business operation Investigated potential day care center sites Developed marketing plan Developed proposal for grant

1994 - 1996

Management Sciences for Health
Boston, Massachusetts

Operations Manager, Management Training (MT) Program Supervised, trained and evaluated Senior Program Assistants Managed effective collaboration between the Management Training Program and other MSH departments Negotiated with major domestic and international training centers Managed database information and integrity Developed Program labor projections Maintained Program filing system monitoring e-mail/Internet access to various countries Researched computer software to meet diverse training needs Developed and maintained departmental presence on the World Wide Web Backstopped overseas staff Acted as program Director in his absence

Course Management responsibilities included ensuring smooth logistical management of 12-15 domestic and international courses annually Developed, designed and managed production and distribution of annual course calendar, training catalog, and individual course announcements to over 8000 colleagues in 200 countries Oversaw course application and invoicing process for more than 300 participants annually Managed course budgets totaling US\$1.3 million Administered and managed professional consultant contracts Analyzed and summarized course evaluations

1992 - 1994

PLAN International
Warwick, Rhode Island

Assistant to the Director of Field Operations, Field Operations Program Developed and oversaw US\$2 million department budget Coordinated communications between International Headquarters and field personnel in 26 countries resulting in timely and efficient exchange of significant information Managed departmental support staff Oversaw workplan and multi-million dollar budget for global communications project Analyzed project feedback against established indicators Coordinated project documentation

Cross functional activities included participating of Strategic Planning Team managing, collecting, synthesizing, and reporting information pertaining to the organizational analysis Coordinating member of Transition Team to decentralize International Headquarters functions Chairperson of ten member Employee Council

1988 - 1992

Carriage House Nursing Home, Inc
Middletown, RI

Administrator Managed daily operations of facility Oversaw \$1.5 million budget while concurrently meeting the needs of 51 elderly residents Managed five departments consisting of 60 professional, technical, administrative, and support personnel Was instrumental in securing federal Medicare approval for facility, elevating level of care provided from Intermediate Care Facility to Skilled Nursing Facility

Assistant Administrator Managed personnel administration, including staff scheduling, payroll, hiring, and firing Oversaw financial administration, including purchasing and accounts receivable Initiated enhancement of computerized system resulting in a more efficient management of information

1986 - 1988

United States Peace Corps
Kenya Ministry of Social Services
Wamba, Kenya

Small Business Advisor Developed handicraft exporting project involving 35 women's groups throughout Kenya. Negotiated terms of export/import with Kenya Government/Central Bank officials. Designed and oversaw appropriate accounting system to meet the needs of low literacy women's groups. Taught Commerce Course in secondary school. Trained women's groups in accounting, marketing, and quality control, leading to project sustainability and self-sufficiency.

LANGUAGE SKILLS

Swahili		Good
Ukrainian	Fair	

COMPUTER SKILLS

WordPerfect DOS 5 1/Windows 6 1	Harvard Graphics 3 0
Microsoft Office (Word, Excel, PowerPoint)	Adobe Acrobat
LOTUS 123/QuattroPro 6 01/AmiPro	FoxPro 2 0
Draw Perfect/Presentations 3 0	Microsoft Project 3 0
Crosstalk/Dialcom	Fast Track Scheduler
Internet/World Wide Web/HTML	Adobe PageMill
GroupWise 4 1	

OTHER ACTIVITIES

Hospice Volunteer, Visiting Nurse Service, Newport, RI, 1990-92

MARIA ENRIQUETA CLARK

EDUCATION

Liberal Studies (49 2 hours accumulated) through various colleges, 1984-1995
Certificate, Marine Aviation Training Support Group, Aviation Supply, 1986
High School Diploma, Immaculate Conception Academy, 1984

PROFESSIONAL EXPERIENCE

Jan 1993 - present

Management Sciences for Health
Arlington, VA

Senior Program Assistant, Rational Pharmaceutical Management Project (RPM) Provide support to the technical staff of USAID, the World Bank and other donor funded projects. These include long term interventions in Nepal and Ecuador, short term interventions in Mexico, Peru, El Salvador, Mozambique and Cambodia. Responsibilities include managing logistics, such as obtaining visas, securing accommodations, coordinating training workshops, monitoring budgets, coordinating communications with clients and technical consultants, and assisting in the development of reports.

In the Study of the Drug Supply System in Ecuador I travelled as part of the assessment team to enter data that was collected from the survey and created reports in R&R Report Writer and WordPerfect.

Procure and maintain inventory of office supplies. Work with vendors to maintain/procure office furniture and office equipment. Develop graphics and manage the cataloging of overheads and slides.

Process all invoices and reconcile accounts over \$11 million. Process other administrative tasks as required.

Jan 1992- Aug 1992

Alpec Team, Inc
Danville, CA

Sales Administrator. Processed all incoming orders for laser equipment products. Ensured requested delivery dates and product specifications were met. Produced reports detailing weekly and monthly sales figures, inventory levels, shipment logs, and backlog summaries. Prepared all documentation for domestic and international shipments via various modes of transportation. Maintained company checking accounts and credit card accounts. Performed all accounts payable functions. Provided general office support, including filing, processing mail, and running various errands.

1986-1992

United States Marine Corps
Alameda, CA

Aviation Supply Clerk Established standard operating procedures for the accounting department Organized office layout and filing system for maximum efficiency Organized and directed training sessions designed to increase proficiency and knowledge of all office personnel Prepared and delivered oral and written training sessions Evaluated all training presentations conducted by office staff Supervised staff of 4-12 people

Material Control Clerk Processed approximately 100 material requisitions daily Verified validity of material requisitioned by work centers via technical publication library Performed all material receiving functions Reconciled all outstanding requisitions with work centers on a bi-weekly basis

Expeditor Acted as liaison between Department of Defense supply activities and two flying squadrons Drafted correspondence to civilian contractors and military supply activities procuring and expediting required material Produced reports comparing the aircraft readiness of four squadrons on a monthly basis

Accounting Clerk Processed over 5000 transactions expensing aviation fuel and material requirements totaling over \$4 million during Operation Desert Shield Posted financial data for use in maintaining account records Prepared monthly financial statements Developed quarterly and annual budgets in accordance with Department of the Navy directives

LANGUAGE SKILLS

Spanish Fluent

COMPUTER SKILLS

Proficient in WordPerfect 5 1/6 0 for DOS and Windows, Quattro Pro for Windows 5 0, Harvard Graphics 2 0, Lotus 123, DOS, dBase, and other commercial software
Knowledge in R&R Relational Report Writer, Pagemaker, WordStar, Microsoft Word, Excel, and Label Pro Plus

TRAINING SKILLS

Completed 1994 MSH Training of Trainers workshop

RACHEL FELICE FEFER

EDUCATION

BA Duke University, Public Policy Studies and Spanish, 1995

PROFESSIONAL EXPERIENCE

August 1996 - Present

Management Sciences for Health
Arlington, Virginia

Senior Program Assistant Backstop for Rational Pharmaceutical Management Project in Nepal, Bangladesh, Central Asia, Ecuador, Peru, Kenya, and Zambia, as well as the Reproductive Health Project and training materials and courses Responsible for conducting research, creating and updating databases, analyzing data, maintaining project files, editing and formatting English and Spanish-language documents, logistical coordination, budget tracking, and communication with USAID supervisors and country representatives

June - August 1996

The World Bank, Pharmaceutical Division
Washington, DC

Intern Responsible for compiling, organizing, and systematizing a pharmaceutical reference system, as well as analyzing and evaluating pharmaceutical components of Bank projects

February - April 1996

Fundación ISALUD (Instituto de la Salud,
Medio Ambiente, Economía, y Sociedad)
Buenos Aires, Argentina

Intern Translated English-language research texts on population health into Spanish

Summer 1994 and 1995

Apogee Research, Inc
Bethesda, Maryland

Intern Contributed to projects dealing with transportation and air quality for local, state and federal government agencies Responsibilities included conducting research, writing, creating graphics, and organizing meetings

Summer 1993

Environmental Protection Agency
Radon Division
Washington, DC

Intern Promoted radon awareness among the general public by writing handbooks, planning for National Radon Awareness Week, initiating outreach efforts in the Asian-American community

Summer 1993

Office of Congresswoman Connie A. Morella
Washington DC

Intern Aided Legislative Assistants through research, writing, and constituent correspondence. Also responsible for various office tasks

Spring and Fall 1995

Duke University
Durham, North Carolina

Office Assistant Assisted with the planning and implementation of Intramural and Sports Club Programs. Co-coordinated Right Guard Campus Clash, ACC Campus Challenge, and Duke 5K

ACTIVITIES

Public Policy Majors Union

Alpha Phi Omega Community Service Fraternity

Community service includes Head Start volunteer, tutor for disadvantaged elementary and high school students, English tutor for Hispanic immigrants, Duke Hospital Playroom volunteer

SKILLS

Computers Internet, WordPerfect 6.1, Quatro+Pro, Presentations, Microsoft Word, Excel, Power Point, Access, Freelance Graphics, Washington Alert

LANGUAGES

English Fluent

Spanish Proficient

HONORS

Magna cum laude, Duke University, 1995

May 1997

1989-1991

Geneva, Switzerland

Pharmacist in charge Managed operations in retail pharmacies

1986-1989

Jerusalem, Israel

Pharmacy Director Managed a retail pharmacy with two pharmacists and four pharmacy technicians

1986

World Health Organization
Geneva, Switzerland

Technical Advisor Department of Environmental Health Developed computerized literature, data and references on occupational health hazards in developing countries

CONSULTANCIES

October 1994 - February 1997

Management Sciences for Health
Arlington, VA

(February 1997) Situation analysis of the pharmaceutical sector in Zambia and project development

(October 1994) Situation analysis of Central Medical Stores (CMS) and the pharmaceutical sector in Sierra Leone, including drug revolving funds and cost recovery

February 1996 - November 1996

World Bank
Washington D C

Reviewed tenders of pharmaceuticals and medical supplies for Zambia Reviewed background papers for the Zambian National Drug Policy workshop Reviewed tenders of pharmaceuticals for community health centres for Vietnam

October 1995 - April 1996

World Bank
Zambia

Provided technical support preparing the pharmaceutical sector strategies department on drug and medical supplies requirements Advised Pharmacy

April 1995

Guinea

BASICS Studied logistics of pharmaceuticals in preparation of USAID-funded family planning and health projects

STUDIES

1983-1985

Geneva University Hospital
Switzerland

Research Associate, Department of Virology Conducted immunological and epidemiological studies in malaria parasitology

1991

World Health Organization
Geneva, Switzerland

Action Programme on Essential Drugs and Vaccines Conducted desk studies on ongoing Essential Drugs Programmes in the field Developed a master plan for the "Pharmaceutical African Initiative" Organized an international workshop in Brazzaville Developed action plans for the Malawi essential drugs programme

PUBLICATIONS

Perspectives actuelles pour le developpement d'un vaccin contre le Malaria *Medicine et Hygiene* 42, 3768-3773, 1984

Immunization with Plasmodium Falciparum Merozoite Surface Antigen I Induces a Partial Immunity in Monkeys J Clin Invest Vol 75, 1718-1721, 1985

Defined Plasmodium Falciparum Antigens in Malaria Serology Bulletin of the World Health Organization, 64 (6), 889-896, 1986

Impact of the Essential drugs Programme in Burundi and Mali since 1981 An internal background paper, WHO/DAP, 1991

LANGUAGE SKILLS

English	Fluent
French	Fluent
Arabic	Fluent
Hebrew	Fluent
Amharic	Native
Spanish	Good

COMPUTER SKILLS

MS Excel
MS Word
WordPerfect
Harvard Graphics
Databases

JENNIFER JONES

EDUCATION

MA University of Denver, International Economics, 1988

BA University of Denver, Political Science and Public Affairs, 1985

PROFESSIONAL EXPERIENCE

1996 - present

Management Sciences for Health
Arlington, VA

Finance/Contracts/Administrative Officer, Drug Management Program (DMP) Functions as Finance/Contracts/Administrative Officer for DMP, and as Administrative/Finance Officer for the Rational Pharmaceutical Management Projects (RPM) Manages financial systems, contracts, personnel, and administration of all DMP projects Works with MSH Contract and Finance offices to develop, maintain, monitor, and report on budgets, including RPM, RPM-Russia, and DMP funds Develops and implements procedures and controls to ensure contract compliance and proper management of project funds Acts as primary liaison between DMP and MSH Contracts and Finance offices to develop and modify cooperative agreements, contracts, and subagreements Supervises Operations Manager and Information Technology Specialist

1992 - 1996

Management Sciences for Health
Arlington, VA

Administrative/Finance Officer, Rational Pharmaceutical Management Project Managed administrative and financial details of the RPM Projects and DMP in the MSH Arlington, VA, office Developed and implemented procedures and controls to ensure contract compliance and proper management of project funds Worked with Contract and Finance offices to modify the cooperative agreement as required and to develop subcontracts and consultant letters of agreement

Administrative duties included supervising and training RPM support staff, and recruiting new staff members as required Coordinated Arlington, VA, office set-up, including procurement of furniture, office equipment, and services Developed and implemented office systems, particularly hard- and data-file management procedures Coordinated intra-office communication and communication with other organizations and agencies

Developed and maintained financial records, provided monthly budget reports and forecasts to Project Director Worked with Project Director, Finance and Accounting offices to develop and implement a task coding system and to develop cost-sharing financial tracking mechanisms

Developed and implemented standard procedures and forms that promoted and/or ensured cooperative agreement compliance Reviewed budgets, activity and travel plans, invoices, and expense forms to ensure that all costs were allowable and allocable Worked with Project Director and technical staff to ensure that required reports were submitted in the manner required by the cooperative agreement

Worked with Contracts and Finance offices to prepare add-ons and cooperative agreement modifications, and to prepare budgets for add-ons and subcontracts. Reviewed budgets for inclusion of all costs and for compliance with AID and MSH policy.

In a WHO-funded activity, installed DMP-developed INVEC software in the Ministry of Health Essential Drugs Programme's Lilongwe Regional Medical Stores, conducted training on the software's use, and modified INVEC's text displayed on screen to reflect local nomenclature.

1990 - 1992

Management Sciences for Health
Boston, Massachusetts

Senior Program Assistant, Drug Management Program. Assisted the Program Director and technical staff by carrying out financial and contract management routines for a portfolio of MSH- and donor-funded projects. These included the World Bank-funded Nigeria Federal Ministry of Health Essential Drugs Programme's INVEC installation, the MSH-funded *International Drug Price Indicator Guide*, and the WHO-funded Drug Sellers Diarrhoea Treatment Project. Responsibilities included monitoring and reporting on the budget status of these projects, coordinating communications with clients and technical consultants, and supervising temporary staff in the preparation of reports and documents.

In the case of the Nigeria consultancy, installed DMP-developed INVEC software in the Federal Ministry of Health Essential Drugs Programme's four state Essential Drugs Projects and in the Central Drugs Procurement Unit, conducted one-week workshop in Lagos on the software's use, provided individualized training to local counterparts, and modified INVEC's text displayed on screen to reflect local nomenclature.

Acted as Production Manager of the *International Drug Price Indicator Guide*, which included contributing to the explanatory notes, coordinating their translation into French and Spanish, analyzing and processing information received from contributing pharmaceutical suppliers, and producing and distributing the guide.

As the WHO Drug Sellers Diarrhoea Treatment Project Coordinator, assisted in the production of the *Guide for Improving Diarrhoea Treatment Practices of Pharmacists and Licensed Drug Sellers* by developing graphics, editing text submitted by contributing authors, and incorporating recommendations from its field test into the guide.

Supported development of RX, a DMP-developed software program for analyzing trends in drug prescribing. Co-authored and produced *RxDD Prescribing Analysis for Diarrheal Disease User's Guide*, the manual for RxDD, an earlier version of RX.

Coordinated departmental computer system, which included procurement and maintenance of hardware and software, training department staff in their use, and liaising with MSH's MIS specialists.

1989 - 1990

Planned Parenthood of Rhode Island
Providence, Rhode Island

Family Planning Counselor Assisted in all aspects of family planning clinic operation Provided contraceptive, decision making, STD, and HIV/AIDS counseling and education In addition, assisted with gynecological examinations, IUD insertions, surgical procedures, and colposcopy examinations Performed routine lab tests and patient work-ups Supervised and trained volunteers Conducted the "Significant Others" support group and trained other staff members to lead the group Developed a resource center of contraceptive, decision-making, STD, and HIV/AIDS literature in the native languages of our clients Organized in-house workshops to promote increased sensitivity toward people of other cultures Certified by Rhode Island Department of Health as an HIV test counselor

1988 - 1989

White and Case
Ankara, Turkey office of New York-based law firm

Assistant to Managing Partner Prepared legal documents, correspondence, bills, and lawyers' diaries Liaised with high-level ministry and corporate officials Conducted all activities in both English and Turkish Acted as Office Manager in her absence and supervised support staff

1985 - 1987

Penrose Library
University of Denver
Denver, Colorado

Evening Supervisor, Reserve Department Supervised and trained staff Implemented a computerized system to regulate document flow and prepared its operator's manual Retrieved and prepared monographs for distribution

1982 - 1985

Center for International Education
University of Denver
Denver, Colorado

Foreign Student Counselor and Study Abroad Assistant Counseled foreign students on American and university culture Interviewed prospective study abroad students and processed their applications Wrote and distributed a quarterly newsletter to students studying abroad Assisted in the organization of the annual "International Fair "

LANGUAGE SKILLS

Turkish	speaking, reading writing good
French	reading fair
Spanish	reading fair

COMPUTER SKILLS

Proficient in Windows, Windows 95, DOS, WordPerfect, Lotus 123, Quattro Pro, dBASE, R&R Relational Report Writer, and other commercial software

TRAINING/SKILLS

“Principles of Law in Contract Formation” course, University of Virginia, 1997
“Introduction to Financial Management” workshop, Association of PVO Financial Managers, 1995
“MSH Supervisory Training” workshop, 1995
“MSH Training of Trainers” workshop, 1991

VOLUNTEER ACTIVITIES

Meals on Wheels, Rhode Island, 1990
Planned Parenthood of Rhode Island, 1989

May 27, 1997

1989-1991

Johns Hopkins University, School of
Hygiene and Public Health
Baltimore, MD

Coordinator, International Health Network The International Health Network (IHN) is a membership organization of the international health programs of eight universities, four schools of public health (Johns Hopkins, Columbia, North Carolina, and Tulane) and four historically black medical schools (Howard, Charles R. Drew, Meharry, and Morehouse). The purpose of the IHN is to facilitate the involvement of member institutions in the programs of the United States Agency for International Development (USAID), and other donor organizations in support of health promotion and disease prevention efforts in developing countries. Served as the Washington representative for the IHN. Responsibilities focused on providing overall direction and general management for the Washington-based Program Office.

1987-1989

Charles R. Drew University of
Medicine and Science, International
Health Institute
Silver Spring, MD

Program and Administrative Officer The major responsibilities entailed providing general supervision, coordination, and management of the program and administrative activities of the Institute and working directly with the Institute Director to establish policies and procedures. Specific areas of responsibility included providing program and administrative direction to staff and office oversight in the Director's absence, monitoring budgets, and serving as liaison for the University in negotiations with international government officials and university academicians with the goal of developing academic linkages in the areas of research, faculty exchange programs, and curriculum development.

1985-1987

Pracon Incorporated
Reston, VA

Project Analyst, Planning and Professional Services As a project analyst duties and responsibilities focused primarily on the areas of

Health Policy Analysis Duties involved the analyses, development and technical evaluation of major health policy issues and assessment of the impact these policies have on the health care industry, particularly the pharmaceutical industry. Other activities involved the monitoring of major scientific and technological developments, developing position papers, preparing legislation, and monitoring major policy initiatives that may alter the health market and the interplay between social, political, and economic issues as they relate to health policy.

Market Research Analysis Market research responsibilities ranged from the identification of the appropriate target audience and development of survey instruments to conducting on-site interviews and the quantitative and qualitative interpretation of statistical research results. These activities culminated in the development of final reports which included oral presentations to top management personnel of major pharmaceutical corporations. Major market research areas included HMOs, nursing homes, drug treatment for communicable diseases, and physician prescribing patterns.

Strategic Planning Activities involved the formulation of strategic recommendations as a result of intensive and result-oriented market research, and responsibility for on-going internal strategic guidance to firm's corporate client base. Duties also included the development and facilitation of short and long-range strategic performance goals for increasing client market share, as well as the development of quantitative market projections.

Project Design and Implementation Activities encompassed conceptualization and analysis of numerous health care services. Responsibilities also included compiling data, writing proposals and coordinating all project phases to ensure timely completion of quality products. Other duties included writing and editing major reports and publications, monitoring product-specific competition, and developing product-specific pricing strategies.

1984-1985

D C State Health Planning and
Development Agency
Washington, DC

Program Analyst Conducted quantitative and qualitative analysis of capital funded projects of District health care providers seeking Certificate of Need (CON) approval. Major projects included the review of Magnetic Resonance Imaging equipment, Lithotripsy, as well as the review of provider developed health care services and other major renovation and construction projects. Other responsibilities included providing individualized consultations and technical assistance to health care provider applicants and presenting staff reports to the various health planning committees.

1982-1984

Provident Hospital
Baltimore, MD

Staff Pharmacist Responsibilities included managing pharmacy services of the hospital and the support personnel, making I V preparations, unit dose and outpatient dispensing, and conducting new drug evaluations and periodic inventory surveys.

1980-1982

Peace Corps
Senegal, West Africa

Health Educator Worked in primary schools during the first year of service. Developed lessons dealing with sanitation, hygiene, first-aid and indigenous diseases and co-authored a health lessons manual. The second year was spent as the pharmacist for the regional pharmacy in the USAID-funded Sine-Saloum health project. Duties included the management, procurement, and distribution of pharmaceutical products through the regional pharmacy, and assessed and monitored the progress of drug related activities in the project.

1978-1980

Johns Hopkins Hospital
Baltimore, MD

Pharmacy Student/Technician Activities included making I V preparations, outpatient prescription dispensing, pre-packing drugs for unit-dose distribution, and compounding various drug preparations when needed.

CONSULTANCIES

October 1990

Kreditanstalt für Wiederaufbau
(KfW), Frankfurt, Germany

Pharmacist The KfW (The German Development Bank) consultancy was to conduct a needs assessment study and a pharmacologic sector analysis of the National Tuberculosis and Leprosy (TBL) Control Programme in Nigeria. Specific responsibilities included conducting a state-by-state assessment of the federal and state-level (for seven states in southern Nigeria) health system infrastructure, performing an analysis of the proposed programme design, and planned components and implementation, including cost (with five-year projections) and financing. The assignment also required developing an implementation plan for the procurement, storage, and distribution of pharmaceuticals, identifying the core problems/main bottlenecks of the regional tuberculosis and leprosy treatment services, and assessing the potential sustainability of the TBL Programme. The report served as KfW's appraisal for a 30 million DM loan to the Nigerian government.

July 1985

John Snow Public Health Group
Boston, MA

Assistant Medical Supply Systems Analyst The consultancy assignment in Kingston, Jamaica, for the John Snow Public Health Group involved serving as the Assistant Medical Supply Systems Analyst to conduct a financial analysis of the medical supply system, assessing the Government of Jamaica/Ministry of Health's system for selection,

procurement, inventory control and distribution of pharmaceuticals and medical supplies, and identifying deficiencies and recommending strategies to improve the warehousing, distribution, and system accountability in order to ensure efficient procurement of pharmaceuticals and supplies to users

PROFESSIONAL WRITING

July, 1992 Ryan, Caitlin C , Keene, Douglas L , Havenner, S , Carde, H , District of Columbia Comprehensive HIV/AIDS Plan 1992-1996

December, 1990 Schonhals, C , Keene, Douglas, L , An Assessment of the National Tuberculosis and Leprosy Control Programme in Nigeria A report to The German Development Bank (Kreditanstalt fur Wiederaufbau, [KfW])

September, 1990 Seaton, Paul R , Keene, Douglas L , Workshops to Empower Universities to Work With USAID An unsolicited proposal to USAID/S&T/RUR The Johns Hopkins University Institute for International Programs for the International Health Network

July, 1990 Sullivan, Walter, W , Keene, Douglas, L , A Fact-Finding Mission to Nigerian Universities of the Nigerian Health Network A report to the International Health Network

April, 1990 Keene, Douglas, L , A Report on the Fifth Annual African Child Survival Initiative-Combating Childhood Communicable Diseases (ASCI-CCCD) Consultative Meeting International Health Network

April, 1990 Keene, Douglas, L , International Health Network Universities in Partnership to Improve Health in Developing Countries A brochure for the International Health Network

January, 1989 King, Rosalyn, C , Santoso, B , Keene, Douglas, L , The Pharmacokinetics of Rifampin in a Selected Population in Indonesia Implications for the Cost-Effectiveness of Therapy Final report submitted to the U S Agency for International Development The Charles R Drew University of Medicine and Science, International Health Institute

October, 1987 Wyant, S , Parios, C , Keene, Douglas L , The Functional Gastrointestinal Market Place in the United Place Presented to Jouveinal Laboratories, Paris, France Pracon Incorporated

June, 1987 Wyant, S , Keene, Douglas L , Pharmaceutical Services in the HMO An Opportunity for Dialogue Pracon Incorporated

March, 1987 Pharmaceutical Manufacturers the HMO Perspective--Challenges and Opportunities, What Works and What Doesn't and Summary Report of the HMO Symposium Pracon Incorporated

January, 1987 Wyant, S , Keene, Douglas L , Pharmaceutical Services in the HMO New Directions, New Decisions Presented to Pfizer Pharmaceuticals and Roerig Division, New York Pracon Incorporated

January, 1987 Wyant, S , Keene, Douglas L , The Independent Practice Associations (IPA) "Spillover" Study Presented to Pfizer Laboratories, New York Pracon Incorporated

October, 1986 Wyant, S , Piazza, C , Keene, Douglas L , Marketplace Economics Alternatives in Medicaid Prescription Reimbursements Presented to the National Association of Retail Druggists, Alexandria, VA Pracon Incorporated

August, 1985 Robinson, Ira C , Keene, Douglas L , LeRoy, A , Bharagava, Hyridaya N , Jamaica Pharmaceutical and Medical Supply Analysis The John Snow Public Health Group for the United States Agency for International Development Mission to Jamaica

June, 1981 Seitz, K , Frederick, M , Keene, Douglas L , Young, P , Manuel D'Education Pour La Sante, Dakar, Senegal

LANGUAGES

French	Speaking and understanding fair, reading and writing poor
Wolof	Senegalese dialect speaking and understanding fair

JULIE E MCFADYEN

EDUCATION

MA University of Virginia, Foreign Affairs, 1992

BA University of Virginia, History and Russian Studies, 1991

PROFESSIONAL EXPERIENCE

1996 - present

Management Sciences for Health
Arlington, VA

Information Systems Coordinator/Editor, Rational Pharmaceutical Management (RPM) Project
Manages RPM work in tools development and information dissemination Manages the process of installing and supporting Drug Management Program (DMP)/RPM software applications in cooperating countries and training of local staff Maintains up-to-date software and documentation libraries of all software developed by DMP, including INVEC, INVEC-2, PASS, ECPRO-2, ESTIMED, and *The International Drug Price Indicator Guide* software Coordinates software distribution and support for INVEC-2, PASS, and ESTIMED, including conducting training and producing promotional material Manages the process of developing and updating user manuals for DMP/RPM software applications Works with the RPM Pharmaceutical/MIS Coordinator to develop computer applications for managing drug and medical supply systems and drug information resources

Coordinates the technical editing process for DMP/RPM publications and reports, and serves as final copy editor on such publications Writes DMP/RPM brochures and activity reports, and manages liaison between DMP/RPM and the MSH publications office in Boston, working with that office to establish appropriate style sheets and formatting guidelines Develops style sheets for DMP/RPM publications and reports Compiles, edits, and publishes *The International Drug Price Indicator Guide* annually

Provides technical oversight and supervision of the RPM Information Technology Specialist, and works with this person to ensure that RPM/DMP information systems are properly maintained and supported Provides backup support for the maintenance of RPM office computer network, hardware, and software Coordinates DMP section of the MSH home page, and supervises activities of DMP/RPM support staff who work in this area

Assisted in the adjudication of a US\$6 million World Bank tender for the Zambia Department of Pharmaceutical Services Reviewed bid documents for compliance with tender terms, and trained staff in the use of MSH's INVEC-2 program for bid comparisons

1994 - 1996

Management Sciences for Health
Arlington, VA

Systems Coordinator/Editor, RPM Project Worked with the RPM Pharmaceutical/MIS Expert to develop computer applications for managing drug and medical supply systems and drug information resources Edited RPM and DMP publications and reports as needed Assisted in development and debugging of INVEC-2 software and oversees publication of the INVEC-2 manual Developed software for in-house use Developed, edited, and published the *International Drug Price Indicator Guide*

DMP computer application development activities include debugging software, modifying programs, and recording software development Oversaw writing, publication, translation, and distribution of the software manuals, as well as manages distribution of software and manuals There are five programs developed by DMP for pharmaceutical management Responsible for installing, or arranging installation of INVEC-2, the largest program, in recipient countries and training local staff Developed INVEC-2 training materials and conducted one-on-one and group training, as well as oversaw post-INVEC-2 installation follow-up activities

Edited and proofread major DMP and RPM documents, ensuring adherence to RPM and MSH standards Edited and coordinated completion of the English and Spanish versions of the RPM manual, *Rapid Pharmaceutical Management Assessment An Indicator-Based Approach* Developed stylistic standards and trained staff on them Developed flyers and promotional materials for DMP and RPM Responsible for DMP portion of MSH WWW home page, including writing text and HTML formatting

Managed the RPM Organization of Eastern Caribbean States (OECS) country program, including coordinating with counterparts at the Eastern Caribbean Drug Service (ECDS) and Medical Stores staff Administered INVEC-2 installations in the OECS, and the ECPRO-2 tender software installation at ECDS Installed INVEC-2 in Grenada and St Lucia, and trained local staff in the program Performed follow-up visits to five countries to install remote access software, trouble-shoot installations, and answer questions

Network administrator for 16-user RPM office computer network, and oversaw the maintenance of local area network (LAN), hardware, and software Kept computer systems in working order Maintained systematic routine for backing up data and keeping inventory of software Obtained and installed commercial software upgrades as required Coordinated and conducted in-house software training Maintained inventory and maintenance schedule of office hardware Identified, interviewed, and managed subcontractors for network work, as well as for writing software manuals

1993 - 1994

Management Sciences for Health
Arlington, VA

Senior Program Assistant, Rational Pharmaceutical Management (RPM) Project Assisted the RPM technical staff by monitoring financial and contractual issues for a variety of RPM- and donor-funded projects These projects included RPM country pharmaceutical assessments, long-term RPM activities in project countries, and short term projects such as a three week US-based pharmaceutical management course for 23 participants from the former Soviet Union Responsibilities included monitoring and reporting on the budget status of these projects, ensuring contract compliance on issues ranging from air travel to procurement, and coordinating communications with clients and technical consultants

While backstopping RPM activities in the OECS, installed DMP-developed INVEC-2 software in St Vincent and the Grenadines, including training local staff in the program, and field-testing the software manual Also assisted in training Pan American Health Organization (PAHO) counterparts in the programming and support of the software

Acted as Production Manager of the *International Drug Price Indicator Guide*, which involved revising the explanatory notes in English, French and Spanish, analyzing and processing information received from contributing pharmaceutical suppliers, and producing and distributing the guide Assisted in designing and developing the guide's accompanying software with the RPM MIS Coordinator

Designed and maintained inventory database and reporting system for office durable goods, ensuring adherence to USAID regulations

Responsible for office computer network, including procurement and maintenance of LAN, hardware, and software Installed software and upgrades as required, and coordinated and conducted in-house software training

1991 - 1992

U Va Alumni News
Charlottesville, VA

Editorial Assistant Wrote copy, edited news releases, and proofread drafts for bimonthly news magazine Responsible for composing "Class Notes" section of magazine, which constitutes approximately one-half of each issue Used AP Style for publications as the magazine's standard

1986 - 1992

Frye & Associates Physical Therapy
Fairfax, VA

Medical Administrative Assistant Managed two physical therapy offices with responsibilities including bookkeeping, billing, scheduling patients, and communicating with other health professionals Trained new employees and dealt extensively with the public

PUBLICATIONS

Editor, *International Drug Price Indicator Guide*, published annually by Management Sciences for Health

Co-author, "Computers in Drug Management" chapter of *Managing Drug Supply*, second edition

LANGUAGE SKILLS

Spanish	good
French	understanding and reading good, speaking and writing fair
Russian	fair

COMPUTER SKILLS

Advanced level of knowledge in DOS, Windows, WordPerfect, Quattro Pro, dBASE, Harvard Graphics, Presentations, R&R Relational Report Writer, Novell NetWare 3.11, Zachary, GroupWise, Netscape, other commercial software, and specialized software developed by the MSH Drug Management Program. Experience with HTML formatting, WordPerfect message servers, and SMTP gateways

TRAINING SKILLS

Completed 1994 MSH Training of Trainers workshop

VOLUNTEER ACTIVITIES

University of Virginia Hospital Emergency Room Patient Representative 1987-1990
Reader for handicapped students at the University of Virginia 1987-1991

HONORS

Phi Beta Kappa

Fall 1993

Dept Pharmacy Health Care Administration
College of Pharmacy
University of Florida
Gainesville, Florida

Visiting Professor Sociological Foundations of Pharmacy Practice (undergraduate course for first year pharmacy students, topics include introduction to health care systems, demography, epidemiology, medical sociology, medical anthropology, the pharmaceutical industry, contemporary professional issues)

August 1992 - August 1993

Centro de Pesquisa e Documentação/Fundação Getúlio
Vargas
Rio de Janeiro, Brazil

Visiting Scholar Development of a pre-proposal to evaluate the public health (SUS) drug distribution system in Rio de Janeiro (delivered to the Pan American Health Organization), developed proposals for "pre-retirement" programs (education and counseling) for Xerox, Coca-Cola, and Varig airlines, lecture series on aging and health in developing countries Gerontology Issues in research design and methodology Worked closely with several students to develop master's thesis with focus on general research design and methods issues

September 1987 - 1992

Dept Pharmacy Health Care Administration
College of Pharmacy
University of Florida
Gainesville, Florida

Teaching Assistant Undergraduate courses Sociological Foundations of Pharmacy Practice, Pharmacy Law, Communication Skills in Pharmacy Practice, Computer Skills for Pharmacists, Graduate Seminar on the Drug Use Process

January 1989 - May 1989

Center for Health Policy Research
School of Medicine
University of Florida
Gainesville, Florida

Research Assistant Evaluation of Area Health Education Centers (AHECs) throughout the United States as a possible model for providing training and medical assistance to indigent populations in North Central Florida

April 1995 - October 1996 Rational Pharmaceutical Management Project
Management Sciences for Health

Training director for course on *Managing Drug Supply and Rational Drug Use* in Mozambique Included developing training materials in Portuguese and conducted several trainings, including training of trainers, in drug supply management and rational drug use for the Ministry of Health in Mozambique

PUBLICATIONS

Miralles, M and C Kimberlin "Access to Health Care and Medication Use in the Brazilian Elderly" *Social Science and Medicine* Forthcoming

Miralles, M "Self-Help Concepts and Applications" by Katz et al (Book review) *American Journal of Hospital Pharmacy*, vol 51 Mar 15 (1994) 847, 851

Miralles, M *A Matter of Life and Death Health Seeking Behavior of Guatemalan Refugees in South Florida* New York, NY AMS Press, Inc (1989)

Miralles, M "Social, economic and behavioral aspects of AIDS for pharmacy practice" *Southern Pharmacy Journal* (May, 1989)

Miralles, M "Anthropology and Refugees" Book review of *Refugees of a Hidden War the Effects of Counterinsurgency in Guatemala* by Beatriz Manz New York SUNY Press *Florida Journal of Anthropology*, vol 13, no 1 (1988)

Miralles, M "Some observations of the food habits and beliefs of Guatemalan refugees in South Florida" *Florida Journal of Anthropology*, vol 12, no 2 (1987)

Miralles, M *Health Care a Rapport Mechanism for Development* Madras, India Centre for Human Development and Social Change (1983)

LANGUAGES

English	Native
Spanish	Good (speaking, reading and writing)
Portuguese	Good (speaking, reading and writing)

DAVID P NELSON

EDUCATION

- PhD Massachusetts Institute of Technology, Nutritional Biochemistry and Metabolism, minor in Economics, 1968 - 1972
- DVM Michigan State University, 1964 - 1967
- BSc Michigan State University, Mathematics and Physical Sciences, 1960 - 1965
- MA Azusa Pacific University, (partially complete) Human Resource Leadership

PROFESSIONAL EXPERIENCE

December 1995 - present Management Sciences for Health
Boston, MA

MSH representative in Ecuador, Senior Associate in Management Information Systems (MIS), Program Manager of Rational Pharmaceutical Management Project in Ecuador, and MIS advisor to FPMD activities in Mexico and Peru

May 1995 - present Instituto de Investigación y Desarrollo de Salud of Ecuador

Principle Investigator, "EDTA to reduce Anemias" project Exploring the effectiveness of EDTA in improving absorption of dietary iron Funded by the Human Nutrition Inst and conducted under auspices of the Inst de Investigación y Desarrollo de Salud of Ecuador

August 1994 - present National Health Research Institute

Adjunct researcher in charge of designing and supervising iron and vitamin A research

Thesis advisor in nutritional biochemistry for the Central University postgraduate nutrition program

June 1994 - present

Tulane University School of Public Health

Adjunct Associate Professor, Department of International Health and Development
Course in Concepts of Nutrition Science with Applications to International Health and Development

1995

University of Alabama, Birmingham

Visiting Professor, Department of International Health

1994

Tulane University School of Public Health and Tropical Medicine

Adjunct Associate Professor, Department of International Health and Development

March 1994 - December 1995

National Micronutrient Commission
Conservation and Development Foundation
"Pablo Jaramillo" Foundation

Nutrition Advisor (in Ecuador) Planning, implementation and evaluation of nutrition and micronutrient programs

1990 - 1994

VITAL/USAID

South American Representative of VITAL, USAID's Vitamin A Field Support Project
Advisor to USAID missions, governments and NGOs Guided design and implementation of national vitamin A deficiency surveys in Bolivia, Panama Ecuador, Nicaragua and Nigeria, definition of national strategies to control vitamin A deficiency, conduct feasibility studies and operations research to perfect interventions, design of surveillance systems Assisted development of social marketing activities to promote consumption of carrots and vitamin A-fortified sugar Established administrative and financial arrangements to carry out project activities timely and efficiently

1990 - 1994

Project HOPE/Ecuador

Nutrition Advisor Designed and supervised implementation of nutrition activities in HOPE's child survival project

Health information systems advisor (1990 - 1993) Designed and supervised implementation of information systems to monitor activities and progress of the HOPE's child survival program

1990 - 1993

Data Base, Cia Ltda
Quito, Ecuador

General Manager Sales and support for UNIX-based relational data base systems
Principle clients Hospital Metropolitano, Policia Nacional, National Electrification
Institute

1987 - 1989

Ministry of Health of Ecuador

Operations Research Advisor, Division of Regionalization Researched design of
decentralized service delivery and management information models and child mortality
trends Participated in design of USAID's Child Survival Project (field methodology,
technical assistance, administrative analysis)

1986 - 1988

USAID/Ecuador's Child Survival Project, (PREMI)

Acting Coordinator (March - October 1987) Responsible for developing the 1987
Implementation Plan and coordinating its execution with the Maternal-Child Health
Division of the MOH and other institutions

Training and Supervision Advisor (1986 to 1988) Assisted in design and implementation
of Training Plan for PREMI and in the formulation of a novel, Regionalized Supervision
System for the MOH

April 1984 - September 1986

Government of Ecuador

Consultant Designed and implemented the evaluation of Ecuadorian Government's
Maternal-Child Supplemental Feeding Program (PAAMI) in collaboration with the
Institute for Nutrition and Socio-Medical Research, Quito, Ecuador

May 1980 - August 1981

Sociedad Anonima de Ventas
Comercial Malo-Moscoso
Marcelo Jaramillo e Hijos

MIS Specialist Design and implementation of management information systems for 3
commercial firms in Cuenca, Ecuador

November 1977 - November 1979

USAID Nutrition Planning Project in Chile

Technical Assistance Team Leader Assisted implementation of US\$ 5 million loan to support nutrition planning by the Chilean Food and Nutrition Council (CONPAN)

- Organized administrative structures and procedures to implement and manage the loan
- Trained CONPAN personnel in nutrition and planning
- Designed and managed a US\$ 500,000 operations research project to improve sanitation and nutrition with prefabricated sanitary units ("casetas sanitarias")
- Advised in design and management of national nutrition projects and programs

1972 - 1975

USAID/Ecuador and the Government of Ecuador

Nutrition Advisor Designed and managed the Family Nutrition Project

- Pioneered use of mass-media, social marketing techniques for nutrition education
- Supervised anthropological research on feeding behavior
- Designed and implemented multidisciplinary nutrition projects in agriculture and social development
- Conducted various training seminars and classes on nutrition, health and development
- Mission Food-for-Peace and Disaster Relief Officer Supervised PL-480 Title II food assistance programs operated by CARE and CRS
Coordinated disaster relief preparedness with Government of Ecuador

Postdoctoral

Angell Memorial Animal Hospital, 1968 Pathology Resident under Drs T C Jones and C E Gilmore

Postdoctoral

Microbiology Division, Institute of Nutrition of Central America and Panama, 1963 Study of enteric flora and gut mucosa under Dr Leonardo Mata A

SELECTED CONSULTANCIES

(May - June 1995) MIS operations research consultant to Guatemala MOH for MSH/Clapp & Mayne Objective increase use of epidemiologic surveillance information for local planning

(January - March 1995) Manager of Health Facilities Survey in Quito and Guayaquil, Ecuador
Designed and supervised survey of 300 public and private facilities for ISTI/JSI Private
Initiatives in Health Project

(May 1993 and May 1994) Evaluator of CRS/Ecuador's child survival activities

(November 1987) Evaluator of AID/W Nutrition Surveys and Surveillance Project in Indonesia
for Sigma One Corp

(June - July 1985) Evaluation team leader Evaluated the INCAP-ROCAP project which
provided technical assistance to Central American countries to manage food assistance programs

(March 1984) Designed the nutrition component of USAID/Lima's Primary Health Care Project

(January 1984) Feasibility study and design of monitoring system for Ecuador's PL-480, Title II
Food Program for USAID/Quito

(June - November 1983) Feasibility study for computerization of academic and administrative
functions of University of Loja, Ecuador

(April 1983) Team leader for evaluation and replanning of Catholic Relief Services' PL-480,
Title II feeding activities throughout Ecuador

(October 1981) Evaluator of USAID's Nutrition Planning Project implemented by the Caribbean
Food and Nutrition Institute, Kingston, Jamaica under contract to AID/Washington

(March - April 1979) Team leader for evaluation of PL-480, Title II Food Program in India with
Community Systems Foundation

(November 1978) Feasibility study for computerization of PL-480, Title II Management
Information system in Honduras under contract to Community Systems Foundation

(April 1975, September 1975) Designed and facilitated nutrition planning seminars for Catholic
Relief Services, Central and South America Regions

DEVELOPMENT AND COMMUNITY ORGANIZATION ACTIVITIES

(1990 - present) Founder and General Manager of NELPO Turis-Agro, a public company in
Cayambe, Ecuador devoted to agri-business

(May 1990 - May 1991) Organizer and Pack Committee Chairman of Cub Scout Pack in Quito,
Ecuador

(January - June 1990) Consultant to University of Florida in organizational development of
livestock producers' associations in the Ecuadorian coast and highlands

(1982 - 1986) Founder and President of Microsistemas y Servicios, a public corporation in Cuenca, Ecuador devoted to introducing microcomputers in teaching and management in the third world Taught information systems concepts, programming, computer modeling and digital electronics to over 150 students

(April 1984) Collaborative design of CRS/Ecuador's Development Program and Five-year Operational Plan Objective to form and strengthen community groups capable of community problem solving

(November - December 1983) Organized Comisariato SAVE, a consumer cooperative serving over 100 lower and middle class employees of five companies in Cuenca, Ecuador

(March - April 1983) Team leader for participatory evaluation of CRS/Ecuador's Development Program Resulted in increased emphasis on community organization

(October 1977, September 1980) Facilitated seminars on community organization and development for Catholic Relief Services and Save the Children

(1978 - 1986) Co-founder and President of Predios y Edificaciones, S A , a public corporation in Cuenca, Ecuador devoted to urban planning and development Policy formulation and oversight

(1978 - 1985) Co-founder and Manager of S A V E , a public corporation in Cuenca, Ecuador dedicated to import and export of computer and automotive equipment Principal responsibilities included personnel and financial management Director of data processing

(January 1977) Co-founder and President of Corporacion de Sistemas Comunitarias, a non-profit corporation in Puerto Rico researching community learning and organization

AWARDS, HONORS, ACHIEVEMENTS AND COMMUNITY ACTIVITIES

- 1995 Principle Investigator Research Grant, Opportunities for Micronutrient Interventions
- 1988 Pack Committee Chairman Cub Scout Pack, Quito, Ecuador
- 1968-1972 N I H Fellow Postdoctoral Research Fellowship at INCAP and MIT
- 1967 Graduated first MSU Veterinary class
- 1967 Phi Kappa Phi
- 1967 Phi Zeta Vice President
- 1966 - 1967 MSU Veterinarian Editor

- 1964 - 1966 Alumni Scholarship Michigan State University
- 1965 Livestock Judging Team Michigan State University
- 1962 - 1964 Peace Corps Volunteer Ecuador, Rural Community Development

PROFESSIONAL AFFILIATIONS

Internet Society
Union of Concerned Scientists
American Society for Training and Development
American Veterinary Medical Association
Michigan Veterinary Medical Association
Society for International Development
Sociedad Latinoamericana de Nutrición
Asociación Latinoamericana de Producción Animal

PUBLICATIONS

- Rodriguez, A, Guamán, G, Nelson, D Vitamin A status of children in five Ecuadorian Provinces Bulletin of PAHO (30)3 234-241, 1996
- Nelson, DP et al 1994 Ecuador Vitamin A Survey Poster presented at IV IVACG Meeting, Bangkok, Thailand
- Nelson, DP, 1994 Computerization of IVACG simplified dietary assessment methodology for assessing risk of inadequate vitamin A intake Paper presented at XV IVACG Meeting, Bangkok, Thailand
- Nelson, DP et al 1994 Encuesta nacional de vitamina A de Ecuador IIDES, Ministry of Public Health Quito
- Nelson, DP et al 1993 Panama Vitamin A Survey Poster presented at XIV IVACG Meeting, Arusha, Tanzania
- Nelson, DP et al 1993 Bolivia Vitamin A Survey Poster presented at XIV IVACG Meeting, Arusha, Tanzania
- Nelson, DP et al 1992 Encuesta nacional de vitamina A de Panamá Ministry of Health Panamá
- Nelson, DP et al 1992 Encuesta nacional de vitamina A Ministry of Public Health and Social Welfare, La Paz

- Nelson, DP 1992 Cancer de ojo o deficiencia de vitamina A? Boletín Epidemiológico No 35, Ministry of Public Health, Quito
- Nelson, DP 1989 Mortalidad infantil en el Ecuador Ministry of Public Health, Quito
- Nelson, DP 1989 Preliminary nutrition strategy for USAID/Quito USAID/Quito
- Nelson, DP 1987 Evolución de la mortalidad infantil en Ecuador Boletín Epidemiológico No 13, Ministry of Public Health, Quito
- Nelson, DP et al 1986 Estudio sobre crecimiento físico de los niños del Ecuador ININMS, Ministry of Public Health, Quito
- Nelson, DP et al 1985 Evaluation of the INCAP/PROPAG Project, JSI, Boston
- Nelson, DP 1984 CRS development program and five-year operation plan Catholic Relief Services, Quito, Ecuador
- Nelson, DP 1983 Estudio de factibilidad para automatizar el procesamiento de datos de la Universidad de Loja Univ Nac de Loja, Loja, Ecuador
- Nelson, DP, D Stanfield and H Bratcher 1983 Evaluation of CRS food and development program in Ecuador USAID/Quito
- Nelson, DP, B Rogers and D Sahn 1979 An evaluation report of the PL-480 Title II program in India Community Systems Foundation, Ann Arbor
- Nelson, DP and RI Miller 1978 A management information system for food distribution in Honduras An exercise in self control Community Systems Foundation, Ann Arbor
- Nelson, DP and D Stanfield 1977 Base groups in development Catholic Relief Services, New York
- Nelson, DP and PM Newberne 1972 Protein deficiency and mucosal granulocytes Nature (New Biology) 236 28-29
- Nelson, DP 1972 Effect of protein deficiency on lysosomal enzymes and bacterial infection PhD Thesis, Massachusetts Institute of Technology
- DeLuca, L, M Schumacker and DP Nelson 1971 Localization of the retinol-dependent fucose-glycopeptide in the goblet cell of the rat small intestine J Biol Chem 246 5762-5765
- Nelson, DP and LJ Mata 1970 Bacterial flora associated with the human gastrointestinal mucosa Gastroenterology 58 56-61

LANGUAGES

Spanish, English bilingual B

JEAN-PIERRE SALLET

EDUCATION

MA University of Bordeaux II, France, Pharmacy, 1980

PROFESSIONAL EXPERIENCE

December 1995 to Present

Management Sciences for Health
Arlington, Virginia

Deputy Director, for the Rational Pharmaceutical Management (RPM) project Assist the director in the coordination and implementation of technical assistance activities and development of funding opportunities for country programs Responsible for the implementation of the RPM Mozambique and Zambia country programs, in order to strengthen various aspects the Essential Drugs Programs This includes training of health staff in drug supply management and rational drug use, development and implementation of systems, forecasting of needs requirements and management of the health reform process For the Russia component of the project, develop "FORMULARY" a bilingual relational database program (Russian-English) designed to support all the steps required for the development of a formulary manual Negotiate a contract with a group of Russian programmers for the development and implementation of "INVEC-2" in Russia, and provide training to their staff Developed "PASS" (prescription analysis software system), relational database software program which allows analysis of prescribing practices and associated diagnoses for a given set of health problems

September 1992 to November 1995

Management Sciences for Health
Arlington, Virginia

Pharmaceutical/Management Information System Expert, for the Rational Pharmaceutical Management project Responsible for all MIS-related activities for this USAID centrally funded cooperative agreement Conduct pharmaceutical assessments and provide technical assistance in various projects (Mozambique, Ghana, Eastern Caribbean, Russia, Ecuador) and non-project countries (Zimbabwe, Senegal, Mexico, Indonesia) Develop "SURVEY" software used to process and analyze country assessment data Manage the design, development and installation of a new multi-user version of "INVEC-2" in collaboration with other bilateral agencies Develop a computerized version of the *International Drug Price Indicator Guide* Oversee the maintenance of Washington office Novell's local area network Responsible for the purchases of project's software and hardware equipment

March 1990 to August 1992

Management Sciences for Health
Boston, Massachusetts

Pharmaceutical Management Information Coordinator and Drugs Logistics Expert, Drug Management Program Responsible for overseeing all DMP activities involving information systems for managing drug supplies, including computer applications for pharmaceuticals management using Xbase language Worked with programmers to improve design and capability of ECPRO, software which supports each phase of the drug procurement process, including tender analysis Designed and developed drug inventory management software (INVEC) for use by member countries of the Eastern Caribbean Drug Service pooled procurement scheme Supervised all stages of INVEC development, programming, and testing Translated program into French and Spanish, installed and implemented INVEC in Dominica, St Lucia, St Vincent, Belize, Ecuador, and Rwanda Developed INVEC's

tender management module for the Nigeria Ministry of Health Essential Drugs Programme
Conducted assessment of pharmaceutical procurement systems in the West Indies, in Africa, in Central and South America, and in Indonesia Evaluated the Community Health Financing scheme for distribution of pharmaceuticals in Senegal Designed a computerized and integrated management information system for the Food and Drug Administration of the Indonesian Ministry of Health, this system processes and controls information on procurement and distribution, monitors use at the health facility level, and models drug budget estimations based on consumption and morbidity data
Developed supplier selection and international competitive bidding contracts and procedures according to World Bank and Senegal's rules and regulations Conducted a needs assessment survey for the purchase of medical equipment in 800 health centers in Ecuador Produce annual *International Drug Price Indicator Guide* and developed a computerized version of this guide

August 1989 to March 1990

Management Sciences for Health
Boston, Massachusetts

Training Coordinator, Drug Management Program Planned, designed, and carried out training courses aimed at improving the managerial capability of decision makers in developing countries to ensure the availability of essential drugs in primary health care settings Trained in both English and French Conducted assessments of pharmaceutical procurement systems for the Eastern Caribbean Drug Service

September 1986 to July 1989

Ministry of Health & French Technical
Cooperation
Dominica, West Indies

Supplies Manager Responsible for procurement of drugs, medical and dental supplies, and laboratory reagents for nationwide distribution in support of primary health care services Managed a revolving drug fund (US\$ 400,000) Developed a manual system for monitoring drug usage at the hospital and district level Developed a comprehensive computerized management information system and performed ongoing analysis of drug consumption/reorder levels, supply/price history, supplier performance, and quality standards Developed and implemented a continuing feedback system to health care professionals on use and management of drugs Participated actively in the Eastern Caribbean Drug Service

February 1987 to November 1988

French Technical Cooperation
Dominica, West Indies

Regional Coordinator Organized regular meetings with F T C health personnel Assisted in development and implementation of various health projects, such as health center construction, polyclinic construction, and improvement of dental services Served as liaison between F T C , the Ministry of Health, and international health organizations

February 1982 to September 1986

Ministry of Health and
French Technical Cooperation
Dominica, West Indies

Chief Pharmacist Developed and co-edited a National Drug Formulary for the Government of Dominica. Established a compounding unit within the Central Medical Stores, which presently produces more than 50 compounds for distribution through the primary health care network. Supervised and trained over 30 pharmacists. Developed and implemented an Extension Project for the Central Medical Stores, which resulted in successful expansion of the local production of internal- and external-use preparations.

COMPUTER SKILLS

Advanced level in DOS/Windows environment applications and PC-compatible hardware maintenance, experienced programmer in relational database design using Xbase languages (Clipper, Foxpro, dBase), RAD tools, report generators. Beginner level for Object Oriented Programming languages (Delphi and CA-Visual Object).

ADMINISTRATIVE EXPERIENCE

Eastern Caribbean Drug Service, St. Lucia, West Indies

- Chairman of Regional Tender Committee (1986-1987)
- Advisory Member of the Committee to Develop the Regional Drug Formulary (12/87 to 7/89)
- Representative for Dominica on Regional Tender Committee (1987-1989)

Central Drug Committee, Dominica, West Indies Secretary (1982-1989)

Dominica Pharmaceutical Association, Dominica, West Indies Secretary (1982-1989)

Caribbean Association of Pharmacists Executive Member (1982-1989)

French Technical Cooperation, Dominica, West Indies Supervisor of FTC health professionals

TRAINING EXPERIENCE

Experience in training senior- and mid-level health professionals in pharmaceutical systems management, including the use of manual and automated systems.

Coordinator Management Sciences for Health, Drug Management Training Programs, worldwide

Coordinator, Pharmaceutical Training Program, Dominica, West Indies

Lecturer, Drug Policy Workshop at Boston University Regional Workshop on Managerial Aspects of Drug Supply Systems (PAHO)

PUBLICATIONS

Co-Author of the chapter "Computers in Drug Management" for the revised edition of *Managing Drug Supply*, 1996

Icks, P , Morsly R , Watt B , Simonet M , Sallet J-P , " Reforme de la Pharmacie Nationale d'Approvisionnement du Sénégal" World Bank, September 1995

Savelli, T , Zagorski, A , Sallet J-P , Duzey, O , Haak H , "Ryazan Oblast Rational Pharmaceutical Project Russia Pharmaceutical Sector Assessment" Washington, D C Rational Pharmaceutical Management Project, November 1995

Sallet, J-P , Laing, R and Housley D "Organization of Eastern Caribbean States Rational Pharmaceutical Project, Pharmaceutical Sector Assessment " Washington, D C Rational Pharmaceutical Management Project, January 1994

Rankin, J R , Lee, D , Ofori-Adjei, D and Sallet J-P "Ministry of Health Ghana Rational Pharmaceutical Management Project, Ghana Pharmaceutical Sector Assessment " Washington, D C Rational Pharmaceutical Management Project, January 1994

International Drug Price Indicator Guide Washington D C Management Sciences for Health, 1991-1995 (updated annually)

Sallet, J -P "Development of a Management Information System for the Pharmaceutical Component " Washington USAID, April 1992

Sallet, J -P "Informatisation de la Gestion des Contraceptifs de l'Office National de la Population (ONAPO)", Kigali, Rwanda Boston Management Sciences for Health, April 1992

Sallet, J -P "Informe de Viaje Proyecto de Supervivencia Infantil y Salud en Ecuador, Second Trip " Management Sciences for Health, February 1992

Rankin, J R and J-P Sallet "Informe de Viaje Proyecto de Supervivencia Infantil y Salud en Ecuador " Management Sciences for Health, November 1991

Sallet, J -P "Design of Drug Inventory Control System, Pharmaceutical Component, Health Sector Financing Project " USAID/ISTI, October 1991

Sallet, J -P "Feasibility Study for the Implementation of the Bamako Initiative in Senegal " MSH/PRITECH, May 1990

Sallet, J -P "Status Report on Grenada's Central Medical Stores and Drug Logistics System " Management Sciences for Health/Eastern Caribbean Dug Service (MSH/ECDS), February 1990

Sallet, J -P "Pharmacy Inventory Control Operations Manual Grenada Ministry of Health "
MSH/ECDS, February 1990

Sallet, J -P "Status Report on Central Medical Stores and the Drug Logistics System for the
Commonwealth of Dominica " MSH/ECDS, January 1990

Sallet, J -P "Status Report on Montserrat's Central Medical Stores and Drug Logistic System After
Hurricane Hugo " MSH/ECDS, October 1989

Sallet, J -P "Status Report on St Lucia Medical Stores and the Drug Logistics System " MSH/ECDS,
August 1989

Sallet, J -P "Dominica Government Formulary " WHO/PAHO, 1984

LANGUAGES

French Native speaker

English Fluent

Spanish Average

French Creole Good

Portuguese Some working knowledge

REFERENCES

Available upon request

MONICA M VILLAGRAN

EDUCATION

- MA George Mason University, Presently a candidate for Master of Arts in Secondary Education in Spanish and English as a Second Language (ESL), May 1998
- BA Bates College, Economics and Spanish, 1994
- Universidad de Sevilla, Six month in-country Spanish program, 1993

PROFESSIONAL EXPERIENCE

August 1995 - Present Management Sciences for Health
Arlington, Virginia

Senior Program Assistant Provide administrative support to the Drug Management Project and the USAID Rational Pharmaceutical Management Project Delegated in the past to assist technical staff in the following countries Nepal, Ecuador, Mexico, Russia, & Poland Presently the backstop for Cambodia Responsibilities include managing logistics for travel by technical personnel, monitoring budgets and in-country spending for respective projects, and formatting consultancy reports

Present Literacy Council of Northern Virginia
Arlington, Virginia

Certified ESL Instructor for the Labauch Literacy Program of Northern Virginia Teach two Somalian women, illiterate in their native language, to read, write, and speak English Tasks include developing meaningful activities and assignments, assessing student progress, and providing constructive feedback while remaining sensitive to culture

August 1994 - April 1995 United States Congress
Washington, DC

Administrative Assistant for Congressman Solomon P Ortiz and legislative staff Responsibilities included answering constituent inquiries, tallying constituent responses regarding current legislation, attending House caucus hearings and debriefing legislative staff on proceedings Worked closely with the Congressman's Press Secretary in translating weekly media reports from English to Spanish

September 1994 - February 1995

Virginia Cooperative Extension

Financial Consultant Volunteer Participated in a state-funded project to counsel Spanish-speaking individuals in their personal finances. Tasks included analyzing client budgets, creating personal balance sheets, and proposing effective options for improving credit and reducing personal debts.

ACTIVITIES

Correspondent writer for George Mason University's student newspaper, present

Member of Bates College's Solidaridad Latina Club, 1990 - 1994

Volunteer counselor for the Bates College Writing Center, 1993 - 1994

Volunteer for the University of Seville's Intercambio Program, 1993

SKILLS

Teaching Spanish and ESL

Computer Proficient in Windows, Microsoft Office, WordPerfect 5 0/6 1, Quattro Pro 6 0, Presentations, and the Internet

LANGUAGES

Spanish Proficient

CRISPIN L VINCENT

EDUCATION

BBA Information Systems Howard University, 1992

Novell Certified Network Administrator Training HTR, Feb 1997

Novell Certified GroupWise Administration and Advanced Training, HTR, March 1997

PROFESSIONAL EXPERIENCE

September 1996 - present

Management Sciences for Health
Arlington, VA

Information Technology Specialist, Netware 4 11 and GroupWise 4 1 administrator for office network Perform upgrades to the server and workstations as required Ensure computers and network backup are in working condition at all times Recommend hardware and commercial software for office use Install new hardware and software upgrades

March 1995 - September 1996

Maxima Corporation
Lanham, MD

Automation Analyst, Administer 135 users in NetWare 3 12/4 1 servers with workstations running Windows 3 1/95 Repair hardware, write and design Microsoft Access programs Responsible for the production update of the office news letter on the Internet Produced standard configurations for all laptops and workstations for the head office and field sites Decided on hardware and software the department needed Ordered, tested and configured new equipment purchased by the department and field sites

Sept 1993 - March 1995

Management Technology
Clinton, MD

PC Specialist, Administered NetWare 3 11 and NetWare 4 1 servers Responsible for memory management, Migrated 1400 workstations from NetWare 3 11 to 4 1 and configured all laptops Provided support for Windows and DOS applications Wrote programs using Foxpro, Clipper, dBASE IV and Paradox for Windows Configured workstations using TCP/IP and provided hardware support

June 1993-Sept 1993

Bell Atlantic Business
Systems Services
Lanham, MD

Field Engineer Assembled and repaired computers and printers for Bell Atlantic clients in the Washington D C and Baltimore-Metropolitan areas Installed and configured computers, printers, modems, backup units, monitors, chatterboxes, network cards, CD-ROMS etc to client specification

Nov 1992 - Feb 1993

Vista Computer Services, Inc
Fairfax, VA

Systems Analyst Developed program using LOTUS 3 1 to select and evaluate bids for MCI Procurement Department

Hardware Specialist Installed and configured 600 personal computers to connect to VAX and Novell networks, provided hardware and software support to the computer operations department

May 1992-Sept 1992

INTELSAT Headquarters
Washington D C

Programmer/Systems Analyst Intern Responsible for doing a system analysis of their Document and Training Department Wrote Foxpro programs to track all documents and graphics produced in house Project implemented software package to retrieve documents and graphics on line Analyzed existing system and researched and evaluated various software packages to ensure selection of optimal system

Feb 1989 - May 1992

Howard University
Washington D C

Programmer/Consultant Junior Consultant to the Office of the Dean Designed, wrote and implemented DBASE IV software program, and wrote manuals for the users of the Howard University School of Business Inventory Control Application

Computer Lab Assistant, Assisted students with programming SAS, SPSS, COBOL and PASCAL, DBASE IV, Rbase and IEF Provided support for the Unix Network and Novell Network 3 12 Server

COMPUTER SKILLS

- Software GoldMine, Reference Manager, DOS 6 22, Windows 95/NT, Anywhere95, Reachout 3 0, Procom Plus 2 1, Crosstalk 6, ST400, Netscape 3 0, Onnet 1 2, Acrobat 3 0, Word 6 0, WordPerfect 6 1, Excel 5, Lotus/ Freelance for Windows, PC Mail, cc Mail, Powerpoint 4 0, Harvard Graphics 3 0, Corel Draw 5 0, DrawPerfect, PC Doc's, Form Flow, Formfill, Photoshop 5 0, PageMaker 5 0, Timeline, Saber, Faxpress 3 0, Peachtree 8 0, SAS, SPSS, PC Tools 8 0, Norton 8 0, Checkitpro, Ontime, MacWrite, Softwindows
- Hardware Compaq, Digital, Versa servers, Digital workstations, Gateway 2000, Dell, WYSE, IBM PS/2 PC's, Toshiba, NEC, Texas Instrument, Digital HInote, Laptops, Docking Unit, HP Laserjet II/III/IV/V, Dot Matrix, HP DeskJet 300/600 printers, Cenktronic Color Printer, HP 12000C, Chatterbox, Routes, Bridges, Term servers, Concentrators, IBM 3090, IBM 3270, AT&T 3b2 Unix System, Syquest external hard drives
- Databases MS ACCESS, VISUAL BASIC, COBOL, dBASE III PLUS, dBASE IV, dBASE V, RBASE, C, TURBO PASCAL, FOXPRO
- Macintosh System 6 0/7 1/7 5, Microsoft Suite (Word 6 0, Powerpoint 4 0, Excel 5 0), Photoshop, Illustrator, PageMaker, Apple Talk, PcAnywhere, Netscape, cc Mail, and PowerPC 9500 software

RPM - RUSSIA

VALARIE A. DE PASS

EDUCATION

BT Hope Bible College, Theology, 1996

BS University of Maryland, International Business and Spanish, 1994

PROFESSIONAL EXPERIENCE

February 1997 - Present

Management Sciences for Health
Arlington, Virginia

Senior Program Assistant Provide administrative and logistical support to the Rational Pharmaceutical Management Project (RPM), Russia Rational Pharmaceutical Management Project (RPM-Russia), and the Drug Management Program office staff and short-term consultants. Make travel and visa arrangements, and communicate with staff and consultants in transit. Work with technical staff and RPM Administrative/Finance Officer to develop consultant letters of agreement and subcontracts.

Coordinate all staff and consultant travel to and from Russia and other NIS countries. Liaise with and provide support to MSH Moscow office. Ensure that Moscow office activities comply with standard operating procedures and provide prompt feedback to procedural question/issues. Coordinate wire transfers for Moscow office expenses. Review all Russia RPM-related expenses and invoices for accuracy and proper approval. Review Moscow office's monthly accounting package to ensure accuracy and compliance with MSH Field Expense Manual.

Support RPM projects in Mozambique and Poland. Provide logistics and document production assistance. Assist in coordination of training workshops, including logistics, course materials, and course certificates. Assist Systems Coordinator/Editor with information dissemination activities. Maintain sufficient stock of DMP and RPM reports within the office. Compile address database for and coordinate mailing of MSH's *Managing Drug Supply*, Second Edition. Interact with MSH Boston office and other MSH programs and projects. Communicate with USAID Cognizant Technical Officer and USAID missions. Generate, edit, proofread, and format correspondence, reports and documents.

October 1995 - February 1997

NYLCare Health Plans of the
Mid-Atlantic
Greenbelt, Maryland

Survey Representative Conduct telephone surveys of NYLCare members. Assess member satisfaction levels. Welcome new members to the health plan and assure that they have proper insurance identification and a primary care physician. Conduct ad-hoc surveys as required. Clarify NYLCare's policies and procedures. Resolve member problems as needed.

February 1995 - July 1995

Gary T Brown & Associates
Washington, DC

Legal Assistant Interview potential clients for validity of claims Develop and maintain potential client tracking system to ensure follow-up Edit and proofread court documents and correspondence Follow up on delinquent accounts with clients to obtain payment Answer phones, send and receive faxes, set up and maintain paper and disk files, update address database, and photocopy as needed

May 1994 - May 1995

Philips of Washington
Washington, DC

Food Server Maintain highest standards of service and courtesy within well-known restaurant to ensure customer satisfaction

June 1993 - August 1993
June 1992 - August 1992

MCI Consumer Markets
Arlington, Virginia

INROADS Intern Develop spreadsheets to analyze monthly revenue gains and losses, prepare monthly financial report, research and compile data for weekly productivity report

SOFTWARE

Microsoft Word, WordPerfect, Microsoft Excel, Lotus 1-2-3, Quattro Pro 6 0,
Corel Presentations, d BASE III+

LANGUAGE SKILLS

Spanish Proficient

ACTIVITIES

The Leadership Institute Foreign Service Opportunity School
INROADS/Greater Washington, Inc

Attend over two dozen professional seminars and workshops covering topics such as management skills, effective communication, and business sophistication

Program Coordinator, Hope Christian Church

Coordinate programs ranging from year-long systematic training course to a training conference for church leaders

HONORS

University of Maryland Honors Program
University of Maryland Dean's List

May 1997

OLYA DUZEY

EDUCATION

MPH University of Michigan, School of Public Health, Health Behavior/Health Education, 1984

BS Wayne State University, College of Pharmacy and Allied Health Professions, Pharmacy, 1979

PROFESSIONAL EXPERIENCE

February 1995-Present

Management Sciences for
Health
Arlington, Virginia

Senior Program Associate Responsible for country-wide and regional pharmaceutical assessment and providing technical assistance in the retail and wholesale sector of pharmacy systems. Specialize in distribution and retail pharmacy management, including management of inventory, cash flow, personnel, marketing, drug pricing, and financial analysis. Other activities include country-wide pharmaceutical assessments, conducting policy options workshops, and serving as a trainer in Drug Management Courses. As a member of the Drug Management Program, provide technical assistance in pharmacy benefits management, drug pricing policy, drug finance, formulary systems development and maintenance, pharmacy and warehouse management, drug information development, and the rational use of pharmaceuticals.

April 1993 - December 1996

Wal-Mart Pharmacy
Cadillac and Big Rapids, Michigan
Bowie, Maryland

Pharmacist Responsible for interpreting and dispensing prescriptions, maintaining contact with other health professionals, educating patients, assisting in selection of non-prescription products, pharmacy inventory control, third party claims submission and reconciliation, financial reports, and supervising non-professional personnel.

June 1989 - December 1994

Ferris State University
Big Rapids, Michigan

Adjunct Assistant Professor, School of Pharmacy Responsible for training fifth-year pharmacy students in community pharmacy externship rotations Areas covered include communicating with patients, co-workers, physicians, and other health care providers, basics of third party contracts and reimbursements, all areas of pharmacy management, and development of skills needed for students' future role as supervisors and providers of pharmaceutical care Also responsible for providing periodic lectures to third and fourth-year students at the university and continuing education lectures to practicing pharmacists

June 1986 - Present

Pharmacist Preceptor Responsible for supervising and training pharmacy students (with intern license) from third-year on to the point of licensure Train students in all aspects of pharmacy practice, commensurate with their progress in the pharmacy program Familiarize interns with legal and ethical requirements of pharmacy practice, and procedures associated with effective pharmacy management, including inventory management, third party contracts and associated issues, use of a computerized pharmacy program, marketing, merchandizing, financial analysis, and strategic planning Determine special interests of students and provide for development of knowledge and skills in those areas Provide certification of internship hours for students to the Board of Pharmacy

September 1992 - April 1993

Rite-Aid Pharmacy
Reed City, Michigan

Pharmacist Responsible for interpreting and dispensing prescriptions, maintaining contact with other health professionals, educating patients, assisting in selection of non-prescription products, pharmacy inventory control, third party claims submission and reconciliation, financial reports, and supervising non-professional personnel Coordinated smooth transfer of operations to Rite Aid Pharmacy after the sale of Westfield Pharmacy

January 1986 - September 1992

Westfield Pharmacy
Reed City, Michigan

Pharmacist and President Co-owner of the pharmacy As pharmacist, responsible for interpreting and dispensing prescriptions, maintaining contact with other health professionals, educating patients, assisting in selection of non-prescription products, pharmacy inventory control, third party claims submission and reconciliation, and supervising and managing personnel Developed and implemented a coherent program of patient education, recognized by patients, prescribers and Ferris State University Developed a diabetes education program, including the effective use of blood glucose monitors in tailoring insulin daily dosages Founder of diabetes support group in Reed City Responsible for the selection and maintenance of pharmacy hardware and software, including pharmacy prescription processing, accounts payable, accounts receivable, and inventory control components Responsible for negotiating contracts with vendors and third party payors Collected and analyzed financial and workload data, and shared responsibility for strategic planning, data collection, marketing, merchansing and promotion for the pharmacy

June 1984 - November 1985

Hansen Pharmacy
Edmore, Michigan

Pharmacist Responsible for interpreting and dispensing prescriptions, maintaining contact with other health professionals, educating patients, assisting in selection of non-prescription products, pharmacy inventory control, third party claims submission and reconciliation, financial reports, and supervising non-professional personnel

March 1984 - March 1985

University of Michigan
Ann Arbor, Michigan

Research Assistant, School of Public Health Coordinated the 1985 Accreditation of the University of Michigan, School of Public Health Collated and analyzed data, developed a procedure for retrieving information from all nine departments, written on various micro- and mainframe computer systems, merged them into one document and edited the product into one final report

September 1982 - September 1983

Clark Professional Pharmacy
Ypsilanti, Michigan

Pharmacist Responsible for interpreting and dispensing prescriptions, maintaining contact with other health professionals, educating patients, assisting in selection of non-prescription products, pharmacy inventory control, third party claims submission and reconciliation, financial reports, and supervising non-professional personnel
Performed a survey of patients using progesterone suppositories for infertility and premenstrual syndrome in order to plan a program of improved services to those patients

June 1980 - July 1982

Michigan Pharmacists Association
Lansing, Michigan

Director of Professional Relations Responsible for developing and maintaining relationships with various professional and consumer associations and community organizations Shared responsibility for legislative program for the association
Assisted in the formation of the Michigan Society of Hospital Pharmacists as a specialty subgroup of the Michigan Pharmacists Association, and directed activities of its membership Responsible for organizing and implementing continuing education programs for pharmacists Assisted in the development of a certification program for pharmacy technicians, including the Pharmacy Certified Technician Training Manual

September 1976 - June 1979

Harper-Grace Hospitals
Detroit, Michigan

Pharmacy Intern Responsible for assisting pharmacists in daily operations of the pharmacy, including processing prescription orders, extemporaneous compounding, locating appropriate drug information and inventory control Assisted in training new pharmacy interns and technicians in their appropriate roles

ELECTED/APPOINTED POSITIONS

1996 - 1998 Our Lady of Victory, Home and School Board, Vice President, President
1987 - 1995 United States Pharmacopeial Convention, Advisory Panel on Pharmacy Practice
1986 - 1989 Home Hospice Board, Mecosta/Osceola County
1983 - 1986 Governor's Advisory Commission on Substance Abuse Services, Vice-chairperson
1984 - 1986 Prescription Drug Abuse Project, State of Michigan

1984 - 1986 Michigan Credentialing Board for Addictions Professionals, Vice-chairperson
1984 Dean Search Committee, University of Michigan School of Public Health
1981 - 1984 WSU Pharmacy Alumni Association Board of Governors
1981 - 1982 Pharmacy Certified Technician Board of Examiners, Executive Officer
1980 - 1982 Michigan High Blood Pressure Council
1980 - 1982 MHBPC Program Development and Implementation Committee
1980 - 1982 Michigan Health Council
1980 - 1982 Michigan Society of Hospital Pharmacists, Secretary
1981 - 1982 APHA Public Affairs Committee
1979 APHA Public Affairs Committee
1979 Dean Search Committee, WSU College of Pharmacy and Allied Health
1978 - 1979 MPA Public Affairs Committee

PROFESSIONAL MEMBERSHIPS

National Community Pharmacists Association (NCPA)
Ukrainian Medical Association of North America
The Washington Group

HONORS/AWARDS

1995 United States Pharmacopeial Convention, Certificate of Appreciation
1991 Reed City Education Association, Certificate of Appreciation
1990 The Northern Michigan Area Health Education Center, Certificate of Appreciation
1986 Governor of Michigan, for Outstanding Service on the Advisory Commission of Substance Services and as Vice Chair
1979 Howard A Donnelly Scholarship and Leadership Award, Upjohn Achievement Award, Lilly Achievement Award, College Register, Outstanding Young Women of America

LANGUAGES

English Fluent
Ukrainian Fluent
Russian Good understanding, reading and speaking ability
Polish Moderate understanding

May 1997

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THOMAS MOORE

EDUCATION

MS East Carolina University, Community Health Administration, 1980

BS University of North Carolina, Pharmacy, 1967

PROFESSIONAL EXPERIENCE

1995 - present Management Sciences for Health
Arlington, VA

Senior Program Associate, Drug Management Program (DMP) Rational Pharmaceutical Management Project Oversees pharmaceutical sector assessments, conducts policy options workshops, provides technical assistance to Ministries of Health and other institutions to improve pharmaceutical systems, supports development of technical assistance organizations, provides training and support to promote economic viability of pharmacies and warehouses, writes technical papers for presentations, workshops, and trip reports, writes questionnaires for pharmaceutical assessments

1981- 1995 Burroughs-Wellcome Co
Greenville, NC

Technical Operations Supervisor Coordinated scale-up activities of new formulations, resolved process problems, and coordinated contract manufacturing/packaging operations for liquid, solid and injectable pharmaceutical drugs Was also extensively involved in working on special production and company-wide projects in software, inventory control, purchasing and cost accounting systems

Project HOPE
Czechoslovakia - December 1990
Bulgaria - October 1991
Kazakstan, Moldova - May 1993

International Consultant These short term assignments involved working with Ministry of Health officials in coordinating the receipt and distribution of vaccines and other pharmaceuticals within the countries, as well as educating health care providers at the facility level in the proper use of these humanitarian assistance medications

1980 - 1981 Eckerd Drugs, Rite-Aid Pharmacies
Greenville, NC

Manager, Pharmacy Department

1979 - 1980 Community Medicine Foundation
Tarboro, NC

Director, Pharmacy Services

February - September 1979 County Memorial Hospital
Greenville, NC

Staff Pharmacist

1978 - 1979 North Carolina Division of Facility Services
Greenville, NC

Pharmacist Surveyor/Educator Worked in hospitals, nursing homes, rural health clinics
and renal dialysis units for their participation in the Medicare/Medicaid programs

1976 - 1977 Project HOPE
Natal, Brazil

International Pharmacist Educator Assisted the state director for distribution of drugs
under the federal assistance program

1974 - 1976 McCam Hospital
McCam, North Carolina

Director of Pharmacy

1972 - 1973 Project HOPE
S S Hope, Natal, Brazil

Director of Pharmacy and Educational Programs Aboard hospital ship S S HOPE

1971 - 1972 Project HOPE
S S Hope, Kingston, Jamaica

Co-director of Pharmacy and Educational Programs Aboard hospital ship S S HOPE

1970 D C Village Hospital
Washington, D C

Staff Pharmacist

1968 - 1970

U S Army 97th General Hospital
Frankfurt, Germany

Staff Pharmacist

1966 - 1968

Community pharmacy
Wilmington, North Carolina

Manager

LANGUAGES

English mother tongue

Portuguese fluent

Spanish working knowledge

German limited knowledge

ANTHONY VICTOR SAVELLI

EDUCATION

MA University of Pittsburgh, Master of Public and International Affairs, 1991

BS University of Pittsburgh, Bachelor of Science, Pharmacy, 1980

PROFESSIONAL EXPERIENCE

1993-Present Management Sciences for Health
Arlington, VA

Director, RPM Russia Project Responsible for managing all Rational Pharmaceutical Management Project activities in the Russian Federation and the Newly Independent States, under the provisions of the NIS Add-on to the RPM Cooperative Agreement, and the RPM Russia Cooperative Agreement Including carrying out pharmaceutical sector assessments and providing technical assistance in formulary development, drug utilization review, procurement, rational drug use, and community pharmacy management

1992-1993 Project HOPE Moscow Office
Moscow, Russia

Humanitarian Assistance Coordinator Coordinated Project HOPE involvement in the Presidential Initiative to provide medical humanitarian assistance to all republics of the Former Soviet Union Supervised Logistics Specialists, Physician Advisors, Pharmacy Advisors, secretaries, drivers, and interpreters

1985-1991 Ohio Valley General Hospital
McKees Rocks, PA

Director of Pharmacy In charge of daily operations and continued development of pharmacy serving 167 bed hospital Duties included purchasing, budgeting and forecasting Selected and installed pharmacy computer system

1984-1985 VA Medical Center
Martinez, CA

Pharmacist Responsible for drug distribution and information activities in all departments of a teaching hospital, including IV additive, chemotherapy, inpatient, and outpatient

1982-1983

Princess Margaret Hospital
Roseau, Dominica

Peace Corps Volunteer As Director of Pharmacy, was responsible for pharmacy operations serving 280 bed hospital. Designed and initiated outpatient pharmacy. Had administrative and teaching responsibilities in the Pharmacy Training Center.

1981-1982

Russell County Medical Center
Lebanon, VA

Pharmacist

1981

Johnston Memorial Hospital
Abingdon, VA

Pharmacist

1980

Rea and Derick Incorporated
Erie, PA

Pharmacist-Assistant Manager

CONSULTANCIES

1991-1992

Project HOPE Swaziland Office
Manzini, Swaziland

Pharmacy Educator With counterparts, managed projects involving Central Medical Stores operations, establishment of a Quality Control Laboratory, and upgrading a Dispenser Training Course. Evaluated pharmaceutical sector and made recommendations for continuing education activities.

OTHER CATEGORIES

Russia

International Non-Governmental Organizations in Moscow, Member

Swaziland

Swaziland National Drug Committee, Invited Guest

Ohio Valley General Hospital

Pharmacy and Nutritional Support Committee, Secretary

Quality Assurance Committee, Member

Infection Control Committee, Member

Hazardous Materials Committee, Member

Computer Steering Committee, Member

University of Pittsburgh School of Pharmacy, Adjunct Faculty Member

Duquesne University School of Pharmacy, Adjunct Faculty Member, Guest Lecturer

Dominica

Dominica Pharmaceutical Society, Member

Central Drug Committee, Member

Affiliations

National Council for International Health

American Society of Hospital Pharmacists

National Council for Returned Peace Corps Volunteers

Pittsburgh Area Returned Volunteers Association

Friends of the Eastern Caribbean

May, 1993

HARALD O SCHWARZ

EDUCATION

- 1993-1994 Specialized Residency in Hospital Pharmacy Administration
School of Pharmacy
University of California, San Francisco, California
- 1981-1987 School of Pharmacy
Rupprecht-Karls-Universitaet, Heidelberg, Germany
Degree Bachelor of Science
- 1981-1981 School of Pharmacy
Freie Universitaet Berlin, Berlin, Germany

PROFESSIONAL EXPERIENCE

- 1995 - present Management Sciences for Health
Drug Management Program
Washington, DC

Senior Program Associate with the Rational Pharmaceutical Management Russia (RPM Russia) Project Manages all formulary development activities in the Newly Independent States Responsible for provision of training to health care professionals, training tool development, and dissemination of information relating to RPM Russia project formulary development component

Drafted a manual on the development and maintenance of hospital drug formularies, now available in Russian and English, and being utilized throughout Russia Planned, organized, lectured and directed formal training courses in formulary development with associated maintenance programs, resulting in participation and training of approximately 130 physicians, pharmacists and health care administrators from throughout Russia to date

Formulary development activities lead to the implementation of the first restricted hospital drug formulary in Russia (Ryazan Clinical Oblast Hospital) Project has been institutionalized through incorporation of formulary development and related concepts into Oblast Health Care Plans, through the formation of Oblast Formulary Committees overseeing further implementation of hospital drug formularies in their respective oblasts, and through changes in university curricula

1994 - 1995

University of California, San Francisco
School of Pharmacy
San Francisco, CA

Assistant Clinical Professor Precepted doctoral students, developed and presented two lectures Authored two publications and delivered six presentations at professional meetings

1990 - 1995

University of California, San Francisco
The Medical Center
San Francisco, CA

Staff Pharmacist Worked in the central unit dose area and the intravenous additive service, in the operating room satellite pharmacy and a clinical satellite pharmacy servicing the Intensive Cardiac Care and Kidney Transplant Units Acted as primary resource to coordinate and troubleshoot daily operations Precepted new employees Appointed acting supervisor for the intravenous additive service in 1993 Developed, implemented and coordinated a Staff Development Program which provided ACPE approved CE credit

Liaison to the Emergency Department Worked with nurses to reach clinical goals Reviewed and audited medication use charging system, leading to the implementation of an automated dispensing unit (*Pyxis MedStation*) System implemented increased billed revenue by \$100,000 annually Coordinated the *Pyxis* implementation with nurses, administrative and technical personnel

Designed, coordinated, implemented and evaluated pilot project for interface between pharmacy computer system (*Digimedics*) and *Pyxis* on a 36 bed vascular surgery unit and an eight bed cardiovascular intensive care unit Based on the results of this study, Medical Center Administration approved the implementation of the *Pyxis MedStation Rx System* hospitalwide with an estimated cost savings of approximately \$1 million over five years

Member of various departmental and interdisciplinary committees including Pharmacy and Therapeutics Committee, Nursing/Pharmacy Advisory Committee, and Task Force on Controlling Drug and Drug Therapy Costs Chair of the Pharmacy Quality Assurance Committee

1989 - 1990

Saint Francis Memorial Hospital
San Francisco, CA and
Longs Drugs, El Cerrito, CA

Intern Pharmacist

1987 - 1988

Kronprinzenapotheke and
Apotheke im Hauptbahnhof
Frankfurt, Germany

Intern Pharmacist

1986 - 1987

United States Army Hospital
Department of Pathology
Heidelberg, Germany

Medical Inventory Assistant

OTHER CATEGORIES

Licensure

Licentiate in Pharmacy, California, Nevada, Maryland, District of Columbia and Germany

Language Skills

German native
English fluent

Membership

American Society of Health-System Pharmacists

PROFESSIONAL ACTIVITIES

International Consultancies

- 1996 Rational Pharmaceutical Management Russia Project Lecturer and workshop session leader/facilitator on drug formulary systems during pharmaceutical sector reform policy options workshop for Novgorod and Pskov oblasts (March)
- 1996 Rational Pharmaceutical Management Russia Project Introduced Drug Use Evaluation Program to and monitored its implementation at the Ryazan Oblast Clinical Hospital, Ryazan Oblast (December 1995 through February 1996)
- 1995 Rational Pharmaceutical Management Russia Project Participated in developing pharmaceutical sector assessment tool (September/October), and participated in pharmaceutical sector assessment in Novgorod and Pskov oblasts (November/December)

Workshops and Seminars

- 1997 Formulary System Implementation Workshop Director and lecturer of in-depth workshop, organized collaboratively between MSH and the American International Health Alliance for 25 health care professionals from Armenia, Georgia and Russia (February)
- 1996 Formulary Development Workshop Director and lecturer of in-depth workshop in Pskov for 65 health care professionals from Novgorod and Pskov oblasts (May)
- 1996 Formulary Development Workshop Director and lecturer of in-depth workshop in Moscow for 68 health care professionals from Altai Krai, Kemerovo, Novgorod, Novosibirsk, Pskov, Ryazan and Tomsk (February)
- 1995 Formulary Development Workshop Director and lecturer of introductory workshop in Novgorod for health care professionals from Novgorod, Pskov, Ryazan and Saint-Petersburg (September)
- 1995 Pharmaceutical Indicator Assessment Workshop Director and lecturer of introductory workshop in Novgorod for health care professionals from Novgorod, Pskov, Ryazan and Saint-Petersburg (September)

Papers and Posters Presented at Conferences and Meetings

- 1996 Drug Use Evaluation - A Mechanism to Improve Quality of Care High Level Technical Meeting Management Sciences for Health Novgorod, Russia (October)
- 1996 Rational Drug Use, Formulary Development, The Hospital Formulary System Drug Information Course, Management Sciences for Health/Pan American Health Organization Washington, DC (June)
- 1996 Drug Usage Evaluation Man and Drugs Conference, Second Annual Meeting Moscow, Russia (April)
- 1995 Management of Change Pharmacy Management Workshop Your Business Plan Management Sciences for Health Ryazan, Russia (September)
- 1994 Schwarz HO, Brodowy BA Replacing Unit Dose Medication Cassettes with a "Point of Use" Medication Dispensing System Perspectives from a Nursing and Pharmacy Staff Standpoint Annual Midyear Clinical Meeting, American Society of Health-System Pharmacy Miami Beach, Florida (December)
- 1994 Schwarz HO, Brodowy BA Evaluation of a "Point of Use" Medication Dispensing System Annual Meeting, American Society of Health-System Pharmacy Reno, Nevada (June)
- 1994 Schwarz HO, Brodowy BA Evaluation of a "Point of Use" Medication Dispensing System Western States Residency Conference, Monterey, California (May)
- 1994 The Role of Continuous Quality Improvement - CQI Grand Rounds Presentation Division of Clinical Pharmacy, University of California, San Francisco, California (March)
- 1993 Brodowy BA, Schwarz HO Implementation of a "Point of Use" Medication Dispensing System - Elimination of Unit Dose Medication Cassettes in a University Teaching Hospital Midyear Clinical Meeting, American Society of Hospital Pharmacists Atlanta, Georgia (December)
- 1993 Management of Change Grand Rounds Presentation Division of Clinical Pharmacy, University of California, San Francisco, California (April)

- 1992 Schwarz HO, Dong DB Evaluation of the IV Add-Vantage Intermittant Delivery System Midyear Clinical Meeting, American Society of Hospital Pharmacists Orlando, Florida (December)

Publications

Savelli, A V , Schwarz, H O , Zagorski, A , Bykov, A Manual for the Development and Maintenance of Hospital Drug Formulary Systems Arlington, VA Russia Rational Pharmaceutical Management Project/Management Sciences for Health, February 1996 (Russian edition), March 1996 (English edition)

Moore, T , Savelli, A V , Schwarz, H O , Zagorski, A , Burimski, K , Solovieva, O Novgorod Oblast Pharmaceutical Sector Assessment Russia Rational Pharmaceutical Management Project/Management Sciences for Health, February 1996

Moore, T , Savelli, A V , Schwarz, H O , Zagorski, A , Burimski, K , Solovieva, O Pskov Oblast Pharmaceutical Sector Assessment Russia Rational Pharmaceutical Management Project/Management Sciences for Health, February 1996

Schwarz, H O , Brodowy, B A Implementation and Evaluation of an Automated Medication Dispensing System AJHP 1995, 52 823-828

Schwarz, H O Intravenous Administration of Hydroxyzine ADR-Alert Drug Information Analysis Service, School of Pharmacy, UCSF (1992)

ANDREI PETROVICH ZAGORSKI

EDUCATION

University of Arizona, College of Pharmacy, Russia Formulary Development Study Tour, 1995

Moscow State Pedagogical University, Postgraduate Fellowship in English and Psychology, 1988 - 1991

Moscow State University, Russian as a Foreign Language, 1990

Moscow State University, School of Languages MA in English and Literature, 1977 - 1982

PROFESSIONAL EXPERIENCE

January 1995 - present Management Sciences for Health, Drug Management Program,
Washington, DC

Program Associate, Director of MSH/Moscow Office

Oversee establishment of MSH's Moscow Office, including identifying suitable office space, recruiting, hiring, and orienting staff, develop internal administrative systems for the Moscow Office, including logistics, budgeting, and controlling finance, prepare briefs on proposed projects and plans, and editing briefs drafted by staff members, represent MSH to senior Russian health officials, acting as a liaison among these officials, US health care specialists, and the Company, assist in identifying US health care organizations and specialists relevant to the concerns of Russian health officials, and arranging and conducting informational tours and meetings for these officials in the US, assist in determining the content and format of MSH training courses, develop training materials and manuals for the Project's technical activities, organize and conduct Rational Pharmaceutical Management workshops in Russia, oversee technical translation services provided by US and Russian interpreters Planned and participated in Rational Pharmaceutical Management Project symposia at II, III, and IV Congresses Man and Drug Organized and directed series of workshops for Health officials and practitioners on technical aspects of Rational Pharmaceutical Management Project Conducted indicator based assessments of pharmaceutical sector of Ryazan, Novgorod, and Pskov oblasts Assisted hospitals in Ryazan, Novgorod and Pskov to implement hospital formulary systems

January - September 1993 USA Environmental Protection Agency/USAID/World Bank Russian Air Management Program (RAMP), Volgograd/Moscow, Russia

Logistics Advisor/Translator Assisted in Ambient Air Monitoring Studies in Volgograd (The Volga Region) and translated RAMP Report

October 1992 - January 1993 Centers for Disease Control/ USAID mission to Russia

Logistics Advisor/Interpreter/Translator Assisted in collecting morbidity data on infectious vaccine-preventable diseases, retrospective statistics calculations, and data on vaccine distribution patterns in Russia Provided interpreting services at The Molecular Epidemiology Russian-American Workshop in April, 1993, Moscow, Russia

1990 - 1992 Moscow School #35, Russia

Deputy Headmaster and Teacher of English & Psychology

1982 - 1990 Moscow School #35, Russia

Teacher of English & Literature

CONSULTANCIES

October - November 1993 USAID Agricultural Sector Privatization mission to Nizhni Novgorod and Perm, Russia

Interpreter/Translator

November 1993 Joint Russian-American Coordination Committee on Assistance in Privatization and Investments in Electric Power Sector, Moscow, Russia

Interpreter/Translator

September 1993 USAID Environmental Technical Assistance Loan mission to Novokuznetsk, Western Siberia, Russia

Logistics Advisor, Interpreter/Translator

July 1993

American Gas Association, USAID & World Bank Plan for Russia, Natural Gas Industry Partnership Program, Moscow, Russia

Interpreter/Translator

PUBLICATIONS

Co-Author

A Savelli, H Schwarz, A Zagorski, A Bykov *Manual for the Development and Maintenance of Hospital Drug Formularies*, Rational Pharmaceutical Management Project, Washington/Moscow, 1996

A Savelli, T Moore, A Zagorski, A Bykov *Guidelines for Implementing Drug Utilization Review Programs in Russian Hospitals*, Rational Pharmaceutical Management Project, Washington/Moscow, 1996

A Bykov, A Zagorski *Drug Formulary as the Basis for Rational Pharmaceutical Management*, Russian Pharmaceutical Gazette, #9, 1996, Moscow

A Bykov, A Zagorski *Clinical and Economic Aspects of Rational Drug Use*, Russian Pharmaceutical Gazette, #8, 1996, Moscow

A Bykov, A Zagorski *Drug Formulary as the Basis for Pharmaceutical Management*, Pharmacia Journal, vol 3, 1996

A Bykov, A Zagorski, T Moore *Clinical-Economic Aspects of Cost-Effective Drug Selection*, Abstracts in Materials of the IV Congress "Man and Drug", Moscow 1997

A Savelli, A Bykov, A Zagorski *First Experience of Cost-Effective Drug Selection Implementation on Regional Level*, Abstracts in Materials of the IV Congress "Man and Drug", Moscow 1997

E Armstrong, A Savelli, H Schwarz, A Bykov, A Zagorski *Drug Utilization Review*, Abstracts in Materials of the III Congress "Man and Drug", Moscow 1996

E Armstrong, H Smith, A Savelli, A Bykov, A Zagorski *Pharmacoeconomic Aspects of Rational Pharmaceutical Management*, Abstracts in Materials of the III Congress "Man and Drug", Moscow 1996

A Savelli, H Schwarz, A Zagorski, A Bykov, N Afanasiev *Drug Formulary as the Basis for Rational Pharmaceutical Management* Abstracts in Materials of the III Congress "Man and Drug", Moscow 1996

Edited and adapted for use in Russia MSH Manual on *Rapid Pharmaceutical Assessment An Indicator-Based Approach*, 1994

A Leontiev, A Zagorski *Russian Schools Yesterday, Today & Tomorrow* Moscow, 1990

LANGUAGES

Russian Native

English Fluent speaking and writing

French Basic

DMP

- Developing management capabilities of Afghan organizations involved in operating health delivery systems at national, regional and provincial levels
- Planning and coordinating management training activities
- Assisting in the development of a comprehensive management information system for internal project management

January 1988 - April 1989

Management Sciences for Health
Boston, Massachusetts, USA

Staff Associate Provided short-term technical assistance and management training in the areas of pharmaceutical procurement, logistics, and management information systems

July 1986 - December, 1987

Management Sciences for Health
St Vincent, West Indies

Logistics Management Specialist, Windward Islands, Eastern Caribbean Regional Pharmaceuticals Management Project Responsible for in-country logistics management activities in St Vincent and the Grenadines and Grenada, working as counterpart to a project Implementation Officer named by, and directly responsible to the Permanent Secretary of the Ministry of Health of these countries Was responsible for recommending improvements and implementation of new systems in areas of store management, inventory control, estimating drug requirements, drug distribution, management information systems and providing management training

1985 - 1986

Management Sciences for Health
Boston, Massachusetts

Staff Associate Provided short-term technical assistance and management training in areas of local manufacture, drug procurement, and health information systems Provided periodic technical assistance in estimating drug requirements, selecting drugs appropriate for local manufacture and carrying out a financial feasibility study of expanded local production of essential drugs in Honduras Assessed training needs of family planning personnel in Bangladesh and developed a training plan for family planning logistics

1981 - 1984

Management Sciences for Health
Boston, Massachusetts

Consultant in development of MSH's pharmaceutical logistics training course for physicians, pharmacists, and senior managers of drug supply programs

Trainer in international training programs on "Managing Drug Supply for Primary Health Care" in India (March 1985), sponsored by the World Health Organization and the Commonwealth Pharmaceutical Association at Management Sciences for Health in Boston

(April 1985 and May 1986) Commonwealth Pharmaceutical Association in Lesotho (June 1986), and at Management Sciences for Health in Boston (April 1987 and May 1988)
Course Director of the Eastern Caribbean Regional Training Program on "Managing Drug Supply," sponsored by the Eastern Caribbean Drug Service in St Vincent, West Indies (January 1987)

Pharmaceutical Logistics Consultant for a World Bank project on improving procurement procedures, inventory control, and management information systems at the Central Medical Stores, Malawi, February to October 1984

1974 - 1984

National Institute of Business Management
Sri Lanka

Management Consultant Consulted at both private and state organizations, directing and conducting training programs for management personnel, and undertaking research projects
Consultancies included

- State Pharmaceuticals Corporation of Sri Lanka, 1974-1979 Designed and implemented new systems and procedures for procurement, inventory control, forecasting drug requirements, stores management, merit rating of suppliers and a management information system for the Corporation
- Designed and installed production planning and control systems at the State Hardware Corporation of Sri Lanka, 1977
- Completed a diagnostic study for the World Bank on material procurement procedures and inventory control systems at the Sri Lanka Central Transport Board, 1979
- Developed a computer simulation model for assessing the personnel requirements in the construction industry and training needs of skilled workers over the next decade in Sri Lanka A World Bank project funded the construction Industry Training Program in Sri Lanka in 1983

May - September 1974

Columbia University
New York, New York

Assistant to the Director of Advanced Systems, Columbia University computer center A simulation study of the dental clinic of the Columbia Presbyterian Medical Center in New York using GPSS simulation language

RESEARCH ASSIGNMENTS

Awarded the Oshikawa Fellowship for 1981 by the Asian Productivity Organization of Japan for conducting research on "Technology Development, Transfer, and Assimilation in Industry," conducted in Sri Lanka, India, Taiwan and Japan

EXPERIENCE IN MANAGEMENT TRAINING

Trainer and Course Director of many programs for middle and top management personnel in the following fields over the last 15 years

Production Management	Inventory Control
Forecasting	Waste Control
Maintenance Management	Management Information Systems
Quantitative Techniques	Small Industry Management
Project Evaluation	Technology Development and Transferal

PUBLICATIONS

Managing Drug Supply, published by Management Sciences for Health, Boston, USA, 1981 Translated into French and Spanish Author of chapters on Procurement Methods, Inventory Control of Drugs, Port Clearing and Systematic Cost Reduction in Pharmaceutical Logistics

LANGUAGES

Fluent in English and Sinhala

TOMOKO FUJISAKI

54 Concord Avenue Apt 202
Cambridge MA 02138
Tel/Fax (617) 576-9278
e-mail tfujisak@hsph.harvard.edu

EDUCATION

- 1995-1996 MASTER OF SCIENCE IN POPULATION AND INTERNATIONAL HEALTH
HARVARD SCHOOL OF PUBLIC HEALTH, Boston, MA
Concentration Health Care and Pharmaceutical Management, Program Evaluation
- 1996 CERTIFICATE, SEMINAR FOR DRUG POLICY FOR DEVELOPING COUNTRIES
March 8-22 BOSTON UNIVERSITY SCHOOL OF PUBLIC HEALTH & WORLD HEALTH ORGANIZATION
Boston, MA
- 1994-1995 MASTER OF PUBLIC HEALTH IN INTERNATIONAL HEALTH
HARVARD SCHOOL OF PUBLIC HEALTH, Boston, MA
Concentration Health Care Policy and Financing, Health Education
- 1988-1989 MASTER OF SCIENCE IN SOCIAL POLICY AND PLANNING IN DEVELOPING COUNTRIES
LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE, University of London, UK
- 1987-1988 POSTGRADUATE DIPLOMA IN INTERNATIONAL STUDIES
UNIVERSITY OF WARWICK, Coventry, UK
- 1979-1983 BACHELOR OF SCIENCE IN PHARMACY
TOKYO COLLEGE OF PHARMACY Tokyo, Japan

WORK EXPERIENCE

- June 1996 - VISITING FELLOW IN INTERNATIONAL HEALTH
HARVARD SCHOOL OF PUBLIC HEALTH, Boston, MA
Conducting a research project to evaluate WHO's contributions to the product development for the control of tropical diseases as part of the Third External Review of the Special Programme for Research and Training in Tropical Diseases (TDR)
- June - Aug 1995 RESEARCH ASSOCIATE
JSI RESEARCH & TRAINING INSTITUTE INC, Boston, MA
- First authored a research paper based on the data collection and analysis about the Japanese policy for the foreign assistance in social development.
- Sept 1991 - Aug 1994 PROGRAM OFFICER
WORLD HEALTH ORGANIZATION OFFICE AT THE UNITED NATIONS, NY
- Assessed information on the United Nations development and humanitarian assistance policy, and advised respective divisions of WHO on appropriate actions
 - Coordinated preparation and implementation of inter-agency missions
 - Presented WHO's policy and programs at the inter-governmental, and inter-agency consultations for economic and social development at the UN Headquarters
 - Participated in the UN General Assemblies, the Economic and Social Council, and the Preparatory Committees for the UN Conferences on Environment and Development (1993), Population and Development (1994), the Social Summit (1995)

Jan -May 1991

ASSISTANT FIELD OFFICER

UNITED NATIONS HIGH COMMISSIONER FOR REFUGEES, Hong Kong

- Assisted refugees in the resettlement process
- Intervened in problems between refugees and the local community/authorities
- Coordinated health and education activities in the refugee camp including an anti-drug campaign

March-Dec 1990

COUNSELOR FOR VOLUNTARY REPATRIATION PROGRAM

UNITED NATIONS HIGH COMMISSIONER FOR REFUGEES Hong Kong

- Provided counseling services to Vietnamese asylum seekers in refugee camps concerning the voluntary repatriation program
- Processed applications in coordination with the governments of Hong Kong and Vietnam
- Coordinated provision of assistance to special cases, such as unaccompanied minors and disabled persons

1983-1987

ASSISTANT CLINICAL RESEARCHER

FUJISAWA PHARMACEUTICAL CO , LTD , Osaka, Japan

- Conducted second and third phase clinical trials of antibiotics, as a member of a task force, for new drug application to the government authority
- Evaluated the quality of collected clinical data, and assisted data analyses on effectiveness and side effects of the new products
- Prepared and organized scientific meetings with researchers

CERTIFICATION

- Licensed Pharmacist (Ministry of Health and Welfare, Japan, 1983)

PUBLICATIONS AND RESEARCH PAPERS

- "Assessment of WHO's Contributions to Product Development for Tropical Diseases Three Case Studies" (1997) - Report to the External Evaluation Committee of the UNDP/World Bank/WHO Special Programme for Research and Training in Tropical Diseases
- Japan as a Top Donor The Challenge of Implementing Software Aid Policy" - to be published in *The Pacific Affairs*, January 1997
- "Essential Drug Policy and Primary Health Care in Developing Countries" (1989) - Master thesis
- "Pharmaceutical Problems in the Third World" (1988)- Dissertation for the Postgraduate Diploma

LANGUAGE AND COMPUTER SKILLS

- Fluent in Japanese (mother tongue) and English, intermediate proficiency in Spanish
- WordPerfect, Word for Windows, Excel, Power Point, STATA, SAS, and Epi-Info

OVERSEAS EXPERIENCE

1995 El Salvador (field study of USAID and NGO public health projects)
1994 Costa Rica (WHO mission to the PAHO Sub-Regional Office)
1991- present USA (employment at WHO and graduate study)
1990-91 Hong Kong (employment at UNHCR)
1989 Togo and Burkina Faso (field study of rural development projects)
1987-89 United Kingdom (graduate study)

DAVID LEE CHIN

EDUCATION

Fellowship Karolinska Institutet, Clinical Pharmacology, 1989
Residency Metropolitan Hospital Complex, Pediatrics, 1983
Intern Integrated Health System of Colón, 1980
Intern Santo Tomás Hospital, 1979
MD University of Panama, Faculty of Medicine, 1978
PostGraduate Emory University, Romance languages and Literary Criticism, 1974
BA Emory University, Chemistry and Romance languages, 1972

PROFESSIONAL EXPERIENCE

1993 - present

Management Sciences for Health
Arlington, Virginia

Deputy Program Director (1994 - present) and Drug Information Coordinator (1993 - present), Drug Management Program (DMP) DMP responsibilities include designing evaluations of pharmaceutical systems in developing countries and providing technical assistance in the selection, acquisition, logistics, and rational use of drugs (see consultant work), maintaining correspondence with international organizations, funding agencies, and foundations, and developing technical proposals for new projects, research opportunities, publications, and other development activities for the DMP Supports and supervises short-term consultants

Since January of 1995, serves as Coordinator for the International Network for the Rational Use of Drugs (INRUD) INRUD is a network of interdisciplinary researchers in 10 countries of Africa and Asia, that aims to promote more appropriate use of medicines through research and training Directs and teaches in the INRUD-sponsored courses on Promoting Rational Drug Use which are organized regionally in Africa and Asia every year Reviews INRUD country core group research proposals and study reports and assists in study design and final report writing and editing Co-editor of the *INRUD News*, published twice yearly

1991 - 1993

Caja de Seguro Social
Medicines Commission
Panamá, Panamá

Coordinator Scientific-Technical Section Coordinated the technical evaluation of applications for additions to the Social Security (Caja de Seguro Social) therapeutic drug formulary list Evaluation included critical assessment of submitted clinical documentation and review of biomedical literature (primary and tertiary sources) Carried out drug utilization studies and evaluation of spontaneous reports of suspected adverse

drug reactions, participated with lectures on appropriate use of medicines in continuing education activities for physicians and pharmacists, edited the drug bulletin *Medicamentos y Terapeutica* Designed and conducted a training program for members of more than 20 Pharmacy and Therapeutics Committees that were formed in hospitals and outpatient clinics of the Social Security health care delivery system

1991 - 1993

Universidad de Panamá
Department of Pharmacology
Panamá, Panamá

Special Clinical Professor Moderated and supervised student seminar sessions on the essential drugs concept and policy, pharmacoepidemiology and adverse drug reactions for pharmacology students in Medicine and Pharmacy Lectured to medical students in the Therapeutics course, which included six hours of principles of clinical pharmacology

1991 - 1993

Universidad de Panama
Instituto Especializado de Análisis
Panamá, Panamá

Associate Researcher WHO Collaborating Center for Drug Quality Control Collaborated as needed on an "ad honorem" (voluntary) basis with the research activities, as a clinician and pharmacoepidemiologist The Center conducts research on interethnic differences in drug metabolism

1989 - 1991

Caja de Seguro Social
Comisión de Medicamentos
Panamá, Panamá

1984 - 1987

Physician-in-Chief Pharmacotherapeutic Information Program Coordinated activities in drug evaluation of requests for additions to the Social Security therapeutic drug formulary, designed and carried drug utilization studies, in 1985 started the drug bulletin *Medicamentos y Terapeutica*, consisting primarily of translated articles from *Drug and Therapeutics Bulletin*, *The Medical Letter*, *Adverse Drug Reaction Bulletin* and others, provided by the Pan American Health Organization/World Health Organization (PAHO/WHO) From 1984 to 1987, coordinated the work of seven pharmacists in a novel drug information service based on the "academic detailing" model Work in 1985 and 1986 contributed significantly to the 28% reduction in drugs and dosage forms from the formulary, eliminating most drugs of doubtful efficacy, many irrational fixed dose combination products, and many therapeutically redundant drugs

265

1982 -1983

Caja de Seguro Social
Comisión de Medicamentos

Chief Resident Department of Pediatrics Reorganized the residency training program, consisting of formal lectures, case report sessions, clinical-pathological sessions, and started "journal club" sessions Also responsible for scheduling residents

1981 - 1982
MetropolitanoComplejo Hospitalario
Panamá, Panamá

Chief of Interns Department of Pediatrics Scheduling duty roster for interns Organized a training program based on most frequent problems seen in pediatrics

1980

Centro Médico Integrado
Sistema Integrado de Salud de Colón
Panamá, Panamá

Medical Deputy Director In addition to clinical responsibilities, assisted the medical director in supervising staff (one nurse and five nursing assistants, one medical technologist, one dentist, a social worker and several clerks) During the four months stationed there, in partnership with the medical director, revenues from cost recovery fees tripled

CONSULTANT WORK FOR MANAGEMENT SCIENCES FOR HEALTH

Mexican Social Security Institute Directed the team of 10 MSH staff and consultants for a rapid assessment of the Mexican Social Security Institute's pharmaceutical system Trained Mexican Social Security Institute consultants and data collectors on survey instrument and methodology for data collection in 40 health facilities and hospitals, and 13 regional and state medical stores The study identified opportunities for significantly enhanced efficiency through a more critical revision of the therapeutic drug formulary and implementation of strategies to promote more rational prescribing, including the establishment of pharmacy and therapeutics committees The study also analyzed recurrent costs and produced models for estimating impact of various interventions on total variable costs Other findings led to recommendations for further studies as well as actions to improve distribution and information management practices In collaboration with Jim Rankin and Maria Miralles, produced the final report and participated in presentation of findings and recommendations to the Director General (March - May 1996)

Nicaraguan Health Sector Modernization Project Study of the Center for Medical Supplies Designed and directed the study of recurrent costs of the Ministry of Health's procurement, warehousing and distribution institution The study analyzed recurrent costs, compared potential costs and feasibility of implementing different operational models Analysis of operating procedures also led to practical recommendations for streamlining norms and procedures (July 1995 - March 1996)

Rational Pharmaceutical Management Project Ecuador Trained data collectors on methodology and data collection instrument for a survey of 20 Ministry of Health facilities and 20 private retail drug outlets Processed and analyzed survey data Developed long-term intervention work plan to strengthen district level capability for pharmaceutical management (July - November 1994)

Nicaragua Decentralized Health Services Project Accelerated Start Component Reviewed the National Essential Drugs List Adapted pharmaceutical indicators to assess status of pharmaceutical logistics and use at health district level Trained Ministry of Health-World Bank Project staff and Ministry of Health district level supply supervisors on indicators and data collection methodology Analyzed findings of survey conducted in 20 public sector health facilities (April - July, 1994)

Rational Pharmaceutical Management Project El Salvador Conducted an indicator-based pharmaceutical sector assessment, as part of a large health sector assessment sponsored by USAID, the World Bank, the Interamerican Development Bank, and PAHO/WHO The assessment covered policy, regulation, public sector pharmaceutical procurement, logistics, and rational use Directed a survey of 20 Ministry of Health clinics and hospitals, 20 Salvadorean Social Security Institute facilities, 20 Non-governmental health care clinics, and 40 private retail drug outlets Personally conducted a prescribing audit of emergency departments in five private hospitals and availability of a sample of essential drugs in corresponding retail drug outlets (September 1993)

Rational Pharmaceutical Management Project Ghana Assisted in developing the indicator-based pharmaceutical sector assessment instrument Trained data collectors for the survey of 20 public sector health facilities Analyzed results of survey Reviewed draft essential drugs list (July 1993)

Mexico Ministry of Health Study on Finance, Procurement and Distribution of Pharmaceuticals and Medical Supplies Reviewed the national essential drugs list, product quality assurance Analyzed results of health facilities survey on prescribing and dispensing, and results of a focus group study involving primary care physicians (April 1993)

Costa Rica Health Sector Reform Study of Finance, Procurement, and Distribution of Pharmaceuticals and Medical Supplies Reviewed the national therapeutic drug formulary, compared acquisition prices for a sample of drugs with average international prices compiled in the MSH *International Drug Price Indicator Guide*, conducted an ABC analysis of pharmaceutical expenditures Developed recommendations for further studies (October 1992)

SELECTED CONSULTANT WORK PRIOR TO JOINING MSH

APSISA Project Strengthening the Ministry of Public Health and Social Welfare, Unidad Técnica de Medicamentos e Insumos Médicos Worked with counterparts at the Ministry of Health to develop capability to evaluate formulary addition requests, conduct drug use studies,

and monitor adverse drug reactions Trained young physicians in primary care facilities to carry out simple prescribing audits, focussing on prescribing of antibiotics and for treatment of acute respiratory infections Ministry of Public Health and Social Welfare, United States Agency for International Development, and Clapp & Mayne San Salvador, El Salvador (January 13 - February 8, 1992)

A Study of Pharmaceutical Selection and Procurement in the Commonwealth of the Bahamas

Worked with health authorities and staff of the referral hospital to develop a strategy to improve selection and procurement Ministry of Health of the Bahamas, Pan American Health Organization Nassau, Bahamas (December 30 - January 3, 1992)

Review of the Guatemalan Social Security Institute Drug Formulary

Critically reviewed the formulary and assisted authorities in working with leading clinicians to support the revised formulary Guatemalan Institute of Social Security, Panamerican Health Organization Guatemala, Guatemala (July 15-26, 1991)

Systems Specifications for Therapeutic Drug Utilization Review Assisted MIS specialist in technology transfer to conduct "therapeutic drug utilization review" to officials in Social Security institutions in Costa Rica and Guatemala Health Information Designs, Inc , Pan American Health Organization San José, Costa Rica and Guatemala, Guatemala (April 22-26, 1991)

Operational Research Related to the Rational Use of Drugs Participated in discussions on status of rational drug use research in developing countries and need for consistent long-term support from donors UNICEF, World Health Organization, the International Children's Centre (March 22-23, 1991)

Health Care II Project Drug Policy and Management Plan Assisted the Ministry of Health to develop a drug policy and drug management plan Ministry of Health, Interamerican Development Bank, and DEVRES Georgetown , Guyana (September 4 - October 12, 1990 and January 14 - February 8, 1991)

Drug Utilization Studies in Chile Assisted researchers in preparing a protocol for a Southern Cone collaborative study on drug utilization Public Health Institute of Chile, Pan American Health Organization Santiago, Chile (October 16-26, 1990)

Mid-Term Evaluation of the Health System Support Project (APSISA) Member of four-person team that evaluated the US\$80 million project funded by USAID Responsible for drug management/logistics and medical supplies components of the assessment Cambridge Consulting Corporation San Salvador (July, 1990)

Evaluation of the WHO Project on Essential Drugs in Sololá, Guatemala Evaluated the pilot WHO Essential Drugs Project in Solola Findings and recommendations led to an extension and increase in coverage to other health districts Pan American Health Organization/ World Health Organization (March 26 - April 7, 1990)

Meeting of Experts on the Glossary of Specialized Terms for Drug Evaluation Participated in review and discussions of draft glossary and equivalent terms in Spanish and English, which was later printed and distributed by PAHO/WHO Pan American Health Organization Panamá, Panamá (February 26 - March 2, 1990)

Comparative Study of Pharmacologic Criteria for Drug Registration in the Andean Countries Assisted design and analysis of findings of a comparative study of criteria for drug registration in the five Andean countries Findings were presented in a workshop with drug regulatory authorities of these countries in the PAHO-supported initiative to harmonize registration criteria Ministry of Health and Social Welfare of Venezuela, Pan American Health Organization Caracas, Venezuela (December 4-8, 1989)

A Study of Essential Pharmaceuticals in Guatemala An Analysis of the Current Situation Performed study of the pharmaceutical sector in Guatemala, to identify opportunities for technical assistance and constraints to potential impact United States Agency for International Development Mission to Guatemala, Health Information Designs, Inc Guatemala, Guatemala (January 10, 1989)

ADVISORY PANELS AND OTHER COMMITTEE WORK

- | | |
|----------------|---|
| 1995 - present | United States Pharmacopeia (USP) <u>Member</u> , Advisory Panel on Drug Utilization Review |
| 1991 - 1995 | United States Pharmacopeia (USP) <u>Member</u> , Advisory Panel on International Health |
| 1994 - present | Pan American Health Organization PAHO Bulletin <u>Ad hoc Reviewer</u> for Drug Utilization Research manuscripts |
| 1993 - present | World Health Organization (WHO) <u>Member</u> Advisory Panel on Drug Evaluation |
| 1991 - 1993 | Drug Utilization Research Group in Central America (DURG/CA) <u>Coordinator</u> |
| 1986 - 1992 | International Society of Drug Bulletins (ISDB) <u>Member</u> Executive Committee |
| 1981-1982 | Complejo Hospitalario Metropolitano Panamá, Panamá <u>Member</u> Comité de Farmacología y Terapéutica (Pharmacology and Therapeutics Committee) |

SELECTED WORKSHOP AND SEMINAR PARTICIPATION

Coordinator and Resource Person "Design and Implementation of a Continuing Education Program on Pharmacotherapy and Rational Use of Pharmaceuticals" Panama Social Security, University of Panama Faculty of Medicine, Pan American Health Organization Panama, Panama (April 6-10, 1992)

Consultant "Harmonization of Essential Drug Formularies in the Andean Countries" Ministry of Health of Colombia, Pan American Health Organization Bogotá, Colombia (February 19-21, 1992)

Instructor National Workshop on "Pharmacoepidemiology" Ministry of Health of El Salvador, Pan American Health Organization San Salvador, El Salvador (October 22-24, 1991)

Consultant National Workshop on "Rational Use of Drugs" Ministry of Health of Venezuela and Pan American Health Organization Caracas, Venezuela (June 12-14, 1991)

Consultant "Harmonization of Criteria for Drug Registration in the Andean Countries" Ministry of Health of Venezuela, Pan American Health Organization Caracas, Venezuela (June 4-7, 1991)

Instructor National Course on "Pharmacoepidemiology" University of Costa Rica, Pan American Health Organization San José, Costa Rica (March 11-15, 1991)

Administrative Coordinator and Rapporteur "A Study of Drug Utilization in Five Central American Countries" Ministries of Health and Social Security Institutes of Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Pan American Health Organization Panamá (March 4-6, 1991)

Participant "Use of Pharmaceuticals in Panama", Bellagio Conference on "Availability and Use of Therapeutic Agents in Developing Countries" Rockefeller Foundation, Carnegie Corporation Bellagio, Italy (April 16-20, 1990)

Instructor "I Central American Seminar on Clinical Laboratory and Pharmaceuticals An Epidemiologic Approach" Was the principal trainer in a two day seminar on pharmacoepidemiology for Ministry of Health officials of Central America and Panama Ministry of Health of El Salvador, Italian Cooperation San Salvador, El Salvador (October 3-5, 1989)

Panelist International Workshop "National Drug Policies What Must be Changed" Participated in discussions on national drug policies, during a meeting of consumer interest groups Federal Congress of Development Action Groups (BUKO) Bielefeld, Germany (October 16-18, 1987)

Instructor International course "Medicines & Society" Participated as resource person in the five-week interdisciplinary course for participants from seven Asian countries Departments of International Health Care Research and Clinical Pharmacology, Karolinska Institutet Stockholm, Sweden (May 18 - June 18, 1987)

Instructor "Bioavailability and Bioequivalence of Drugs and Drug Products" Pan American Health Organization, United States Agency for International Development, University of Panama Panamá, Panamá (October 13-17, 1986)

Member Task Force 5 information and Education as Determinants of Antibiotic Use, International Meeting on "Use of Antibiotics Worldwide" Contributed with experience in providing providing persuasive drug information ("academic detailing") and other education-based interventions to improve antibiotic use World Health Organization, National Institutes of Health Bethesda, Maryland (September 22-24, 1984)

Instructor "Approval and Licensing of Drugs and Drug Products" Responsible for sessions on drug evaluation, drug utilization studies and monitoring for adverse drug reactions, and drug information Pan American Health Organization, University of Panama Panamá, Panamá (May - June, 1984)

MEMBERSHIPS IN PROFESSIONAL SOCIETIES

- | | |
|----------------|---|
| 1991 - present | Association for Health Services Research, USA |
| 1991 - present | International Society for Pharmacoepidemiology (ISPE), USA |
| 1989 - present | International Society of Technology Assessment in Health Care, % Cambridge University Press, New York |
| 1989 - present | Associate Fellow, American Academy of Pediatrics |
| 1989 - present | Drug Information Association (DIA), USA |
| 1987 - present | WHO Drug Utilization Research Group, % WHO Regional Office for Europe, Copenhagen, Denmark |
| 1987 - present | New York Academy of Sciences, New York |
| 1986 - present | International Society of Drug Bulletins, Paris, France |
| 1983 - present | Sociedad Panameña de Pediatría, Panamá, Republic of Panamá |
| 1983 - 1984 | Sociedad Panameña para el Estudio Científico del Retardo Mental, Panamá, Republic of Panamá |

LANGUAGES

Spanish Native, English Excellent, Portuguese Reading (Good), speaking (fair), Italian Reading (Good), speaking (fair) , French Reading (Good), speaking (fair), Chinese (Hakka dialect) Good

SELECTED PUBLICATIONS ON CLINICAL PHARMACOLOGY AND THERAPEUTICS

The complete list contains 58 publications on clinical pharmacology and therapeutics and clinical medicine (pediatrics and surgery) in English and Spanish language medical journals (available on request)

- 1 Lee D, Quick J Quality assurance for drug procurement In Quick J, et al (eds) **Managing Drug Supply** 2 ed West Hanford, Connecticut, Kumarian Press, 1997, pp 271-287
- 2 Lee D, Bergman U Studies of drug utilization In **Pharmacoepidemiology** Strom BL (ed) 2 ed New York, John Wiley & Sons, 1994, pp 379-393
- 3 Dahl M-L, Isehus L, Alm C, Svensson J-O, Lee D, Johansson I, Ingelman-Sundberg M, Sjoqvist F Polymorphic 2-hydroxylation of desipramine a population and family study **Eur J Clin Pharmacol** 1993,44 445-450
- 4 Lee D, Balasubramaniam K, Ali HM Drug utilization studies, their transferability between industrialized and developing countries In Dukes MNG (ed) **Drug Utilization Studies Methods and uses** WHO Regional Publication European Series no 45 Copenhagen, World Health Organization Regional Office for Europe, 1993, pp 193-218
- 5 Lee D, Bergman U The quantification of drug risks in practice In Dukes MNG (ed) **Drug Utilization Studies Methods and Uses** WHO Regional Publication European Series no 45 Copenhagen, World Health Organization Regional Office for Europe, 1993, pp 79-95
- 6 Lee D The potential for pharmacoepidemiology in Central and South America **Topics in pharmaceutical sciences 1991** Proceedings of the 51st International Congress of Pharmaceutical Sciences of F I P , Washington D C , USA, 1-6 September 1991 Stuttgart Medpharm Scientific Publishers, 1992, pp 391-404
- 7 Lee D, Chaves Matamoros A **Estudio de utilización de medicamentos en cinco países de Centroamérica 1985-1988** PNSP 91-904 San José, Costa Rica, Organización Panamericana de la Salud, 1991
- 8 Lee D, Gan V, Quijano R, Uppal R The challenge for clinical pharmacology in developing countries the current situation **Int J Clin Pharmacol Ther Toxicol** 1991,29 299-302
- 9 Lee D Drug utilization in Panama **J Clin Epidemiol** 1991,44 (Suppl II) 31S-38S
- 10 Lee D, Chaves Matamoros A, Mora Duarte J Changing antibiotic utilization patterns in Costa Rica **APUA Newsletter** 1991,9(1) 7-8 [Reproduced in **Essential Drugs Monitor** 1993, (14) 20

- 11 Lee D Continued marketing of a useless drug ('Varidase') in Panama **Lancet** 1990,335 667
- 12 Bergman U, Lee D Current approaches to measurement of drug use and abuse in Sweden In Fischman MW, NK Mello NK (eds) **Testing for abuse liability of drugs in humans** National Institute on Drug Abuse Research Monograph Series 92 pp 267-286, 1989
- 13 Lee D, Chaves Matamoros A Utilización de agentes antihipertensores en las instituciones de seguridad social de Costa Rica y Panamá **Fármacos** 1989, 4 53-65
- 14 Alván G, Lee D Viewpoints on the clinical pharmacokinetics of hypnotic drugs In Workshop "**Treatment of Insomnia**" Drug Information Committee, National Board of Health and Welfare, Sweden, 1988 81-93
- 15 Arias TD, Jorge LF, Lee D, Barrantes R, Inaba T The oxidative metabolism of sparteine in the Cuna Amerindians of Panama Absence of evidence for deficient metabolizers **Clin Pharmacol Ther** 1988, 43 456-465

COLLABORATION IN PUBLISHED INTERNATIONAL STUDIES

- 1 Collaborative Group on Drug Use in Pregnancy (CGDUP) The use of psychotropic drugs during pregnancy a report of the International Co-operative Drug Use in Pregnancy (DUP) Study **Eur J Clin Pharmacol** 1993,45 495-501
- 2 Collaborative Group on Drug Use in Pregnancy (CGDUP) An international survey on drug utilization during pregnancy **International Journal of Risk & Safety in Medicines** 1991,2 1-5
- 3 Collaborative Group on Drug Use in Pregnancy (CGDUP) An international survey on drug utilization during pregnancy (Profile) **International Journal of Risk & Safety in Medicines** 1992,3 49-52
- 4 Collaborative Group on Drug Use in Pregnancy Medication during pregnancy an intercontinental cooperative study **Int J Gynecology Obstetrics** 1992,39 185-196
- 5 Avorn J, Harvey K, Soumerai SB, Herxheimer A, Plumridge R, Bardelay G Information and education as determinants of antibiotic use report of Task Force 5 **Rev Infect Dis** 1987,9(Suppl 3) S286-S296

SELECTED INVITED LECTURES

"Pharmacoepidemiology in Latin America" University of Maryland at Baltimore Department of Pharmacy Practice and Science Graduate Seminar Series Baltimore, Maryland, May 7, 1997

"Rational Drug Use Strategies in Latin America" University of Maryland at Baltimore Department of Pharmacy Practice and Science Graduate Seminar Series Baltimore, Maryland, May 7, 1997

"Rationalizing the Drug Formulary in Panama" Georgetown University Medical Center Clinical Economics Research Unit and World Health Organization Short Course for INCLEN Researchers May 5-16, 1997 Washinbgton, DC, May 14, 1997

"Pedagogic interventions" Symposium on "Challenge of Rational Drug Use", August in the VI World Congress on Clinical Pharmacology and Therapeutics (CPT VI) Buenos Aires, Argentina, August 4-9, 1996

"Prioridades en Selección Embarazo, Transplantes y Enfermedades Crónicas" II Conferencia Internacional de Farmacología Clínica Uso Racional de Medicamentos" Hotel Herradura, August 21-23, 1995 San José, Costa Rica, August 22, 1995

"The Essential Drugs Concept and Rational Drug Use" 301 Hospital Beijing, China, April 18, 1995

"International Collaboration for Rational Drug Use The International Network for Rational Use of Drugs" First China National Conference on Pharmacoepidemiology Wuhan, China, April 21, 1995

"Improving Rational Drug Use The International Network for Rational Use of Drugs" Liu Hua Qiao Hospital, Guangzhou, China, April 24, 1995

"Role of drug utilization studies in improving drug information" International Meeting on Drug Information US Pharmacopeial Convention (USP), University of Buenos Aires Faculty of Pharmacy and Biochemistry, Ministry of Health (Argentina), and the Pan American Health Organization Buenos Aires, Argentina, April 28-30, 1993

"The potential for pharmacoepidemiology in Central and South America" Symposium "Pharmacoepidemiology the global situation" 51st International Congress of Pharmaceutical Sciences of F I P Washington, DC, 1-6 September 1991

"El concepto de medicamentos esenciales y el curriculum de las Facultades de Medicina y de Farmacia Taller Nacional "Enseñanza de la Farmacología, Farmacoterapéutica y Medicamentos Esenciales" University of Panama and PAHO/WHO, Panamá, July 18-21, 1989

"How can drug bulletins contribute to the quality and availability of information on therapeutics, notably on the use of essential drugs, in countries where they are insufficient?" International Society of Drug Bulletins (ISDB) Inaugural meeting, Stockholm, Sweden, August 2-3, 1986

"Clinical pharmacology and national drug policies Clinical pharmacology and essential drugs 10 years later" WHO Workshop, III World Conference on Clinical Pharmacology and Therapeutics Stockholm, Sweden, July 27-August 1, 1986

"Innovative programs for optimizing drug utilization in Panama" 22nd Annual Meeting, Drug Information Association, Washington, D C , June 1-5, 1986

"The Quest for Objectivity" International Meeting "Drug Information" Ministry of Health of Spain and WHO Regional Office for Europe Madrid, Spain, May 20-22, 1985

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CHRIS B. OLSON

EDUCATION

Pharm D University of Southern California, School of Pharmacy, 1978

Pre-Pharmacy University of Southern California, 1974

PROFESSIONAL EXPERIENCE

1991 - present

Mission Bay Memorial Hospital
San Diego, California

Director of Pharmaceutical Services Responsibilities include development and implementation of programs for Continuous Quality Improvement (CQI), Drug Usage Evaluation (DUV), Adverse drug reactions, drug formulary, and clinical pharmacy monitoring and consulting in Design, layout and relocation of new pharmacy including implementation of computerization and supervision of personnel

1985 - 1991

Management Sciences for Health
Boston, Massachusetts

Senior Program Associate (1991 - present) Provides technical assistance in areas such as formulary development and management, estimation of drug needs, quality assurance, and procurement and logistics

Pharmacist Specialist

Ministry of Health - Ecuador USAID-funded consulting to assess drug supply and case management issues for the cholera epidemic Developed a computer program to rationalize drug procurement and distribution Developed a 5-year plan for improving availability and quality of child survival pharmaceuticals (May, June, October, November, 1991)

Ministry of Health - Honduras USAID-funded consultancies to draft the pharmacy portion of the Honduran Health Code Developed a proposal for the Ministry's pharmaceutical procurement office that included organizational structure, policies, procedures and an implementation plan Drafted a program to improve efficiency and availability of pharmaceuticals in hospital pharmacies

Drug Services and Procurement Advisor

Organization of Eastern Caribbean States (OECS) through the USAID-funded Regional Pharmaceuticals Management Project called the Eastern Caribbean Drug Service (ECDS) Primary responsibilities included procurement, formulary development, and quality assurance Dr Olson wrote the first edition of the ECDS Regional Formulary and Therapeutics Manual, a 320 page handbook to promote formulary adherence and improve prescribing and dispensing practices

Drug Supply/Logistics Specialist

Ministry of Health - Tegucigalpa, Honduras USAID-funded consultancies, training of personnel at the central and regional medication warehouses for reorganization of stock and implementation of computerized inventory management (March-May & November-December 1989)

International Institute of Tropical Agriculture (IITA) - Ibadan, Nigeria Assessment of IITA Health Care services with recommendations to reduce costs and assure a high standard of quality (February 1989)

PROSALUD - Santa Cruz, Bolivia Assessment of drug supply logistics with recommendations to improve cost effectiveness of this self-supporting primary health care project through procurement and inventory control strategies (October 1988)

Caja Costarricense de Seguro Social (CCSS) - Costa Rica USAID-funded consultancy to introduce the Drug Estimation and Monitoring System (DEM) to the CCSS for projecting pharmaceutical requirements and monitoring drug use (August 1988)

Management Sciences for Health - Boston, MA Developed session guides for a training manual funded by a PEW grant awarded to the MSH Drug Management Program, in formulary development and management, procurement strategies, supplier selection, strategies of distribution, and inventory concepts (September-November 1987 and June-August 1989)

Ministry of Health - Tegucigalpa, Honduras USAID-funded study of selection and procurement of medications in the public health care system (July-August 1987)

National Institute of Health - Islamabad, Pakistan USAID-funded team for development of management information system in national CDD program (June 1987)

Management Sciences for Health - Boston, MA Trainer, Managing Drug Supply Course (April 1987, April-May 1986)

Ministry of Health - Tegucigalpa, Honduras USAID-funded consultancy, recommendations for development of inventory control systems at regional warehouses and clinical facilities (March 1987)

Ministry of Health - Harare, Zimbabwe WHO team for development of morbidity-based computer program for estimation of drug requirements in the public health sector (January-February 1987)

Ministry of Health - Tegucigalpa, Honduras USAID-funded consultancy, recommendations for occupancy and organization of the new central medication warehouse (October-November 1986)

National Institute of Health - Islamabad, Pakistan USAID-funded consultancy, assessment of the ORS distribution system (August - September 1986)

Ministry of Health - Tegucigalpa, Honduras USAID-funded consultancy, recommendations for internal modifications and computerization of the new central medication warehouse (June-July 1986)

Ministry of Health - Lagos, Nigeria USAID-funded health care assessment team (October-November 1985)

1979-1987 (part time after 1985)

American Medical International Pharmacy Management Services

Clinical Pharmacist, Mission Bay Hospital, San Diego

Director of Pharmacy, College Park Hospital, San Diego

Responsibilities/accomplishments included training seminars and lectures, development and implementation of medical distribution systems, development of computerized therapeutic drug monitoring, supervision of group procurement and inventory control, bulk compounding, and re-packaging

September 1984 - June 1985

Pharmacy Tour

Lecturer and Consultant on pharmacy management systems Countries included Japan, South Korea, Taiwan, Hong Kong, Thailand, Malaysia (Peninsular and Sabah), Singapore, Indonesia, Sri Lanka, India, Philippines, and China

June 1980 - October 1981

Pharmacy Tour

Lecturer and Consultant on pharmacy management systems Countries included Guatemala, Honduras, Costa Rica, Panama, Colombia, Ecuador, Peru, Bolivia, Brazil, Paraguay, Chile, Tahiti, Fiji, New Zealand, Australia, Indonesia, Singapore, Malaysia, Thailand, Burma, Nepal, Hong Kong, and the Philippines

PUBLICATIONS

Eastern Caribbean Drug Service, Regional Formulary and Therapeutics Manual, First Edition (1988)

"Observations of a Traveling Pharmacist" (Parts III, IV,, and V), American Journal of Hospital Pharmacy (April, May, June 1986)

"A Critical Review of Pharmacy Practice in Japan", Japanese Pharmacy Journal (May 1985)

"Observations of a Traveling Pharmacist" (Parts I and II), American Journal of Hospital Pharmacy, Volume 39, pp 872-876, 1051-1056 (May- June, 1982)

San Diego Society of Hospital Pharmacists Newsletter, Co-editor

Mission Bay Hospital Drug Information Newsletter, Editor

LICENSES

California State Board of Pharmacy #32415

Nevada State Board of Pharmacy #7236

LANGUAGE SKILLS

Spanish FS-3 Reading, writing, speaking

COMPUTER SKILLS

Multimate Advantage II, Word Star Professional, Lotus, D-Base III+

JAMES R RANKIN

EDUCATION

- MA Columbia Pacific University, San Rafael, California Health Care Administration, 1988
- BA Columbia Pacific University, San Rafael, California Health Care Administration, 1987
- Pharmacy Brotman Memorial Hospital & USC College of Pharmacy Adult Learning Program, Los Angeles, California, 1973-76
- English Tulsa University, 1963-65 Honor H P & Sophie Taubman Scholarship
- Physics University of Oklahoma, 1962-63 Honor Presidential Scholarship

PROFESSIONAL EXPERIENCE

July 1989 - present

Management Sciences for Health
Arlington, VA

Director, Drug Management Program (DMP) Together with other MSH officers and Directors, serves on MSH's Management Committee which is responsible for operations management of the company. Manages all MSH corporate activities in areas related to drug management, such as selection, financing, procurement, distribution, and use of essential drugs and supplies. Responsible for program administration and financial management, new project development, long-term and short-term technical assistance, drug management training, publications, and microcomputer applications. Manages DMP relationships with donors and international agencies, and develops funding proposals for new DMP projects.

Oversees management of DMP contracts and cooperative agreements with bilateral and multilateral agencies. Current (1996) long term agreements managed by DMP include the USAID-supported Rational Pharmaceutical Management Project (RPM) and RPM-Russia, and the International Network for Rational Use of Drugs (INRUD), mainly supported by the Danish aid agency Danida. Collectively, these projects are working long term with 14 countries (Ecuador, Russia, Ghana, Mozambique, Nigeria, Tanzania, Uganda, Zambia, Zimbabwe, Bangladesh, Indonesia, Nepal, Thailand, and Philippines).

Manages DMP training programs and study tours in the United States and overseas. Trains developing country health professionals in DMP's courses in drug management, held both in the United States and in Africa, Asia, and Latin America.

Manages all DMP activities related to disseminating and improving use of drug and management information. Manages a multi donor project supporting the revision of the

MSH textbook, Managing Drug Supply, also serving as Senior Editor for the revised book, and principal author of six chapters

Provides technical oversight of drug management activities in MSH-managed development projects. Examples in recent years include projects in Ecuador, Honduras, Kenya, Madagascar, Nicaragua, Haiti, the Philippines and Senegal, also manages DMP interaction with BASICS, the worldwide USAID-supported child survival project

Provides direct short-term technical assistance in areas such as pharmaceutical system assessment, administration and financial management, cost sharing, procurement, logistics management, formulary development, and management information. This has included consultancies to projects in seventeen countries, including Antigua, Belize, Dominica, Grenada, St Kitts, St Lucia, St Vincent, Montserrat, Honduras, Ecuador, Mexico, Nicaragua, Kenya, Nigeria, Sierra Leone, Philippines, Russia

Especially interested in effective use of drug information, quality assurance indicators, financial sustainability, formulary development, rational drug use, and cost-effective procurement. Actively involved in developing software models for estimating drug requirements, analyzing prescription data, and inventory and procurement management information

July 1989 - September 1990

Management Sciences for Health
Boston, Massachusetts

Director, Eastern Caribbean Regional Pharmaceuticals Management Project. Managed financial and technical assistance activities of USAID project which developed revolving drug fund and pooled pharmaceutical procurement service for seven Caribbean countries. Developed and installed database inventory management program

November 1986 - January 1988

Management Sciences for Health
Eastern Caribbean Regional
Pharmaceuticals Management Project

Logistics Management Specialist, Leeward Islands. Based in St Kitts, worked as counterpart to Project Implementation Officers in St Kitts and Nevis, Montserrat, and Dominica in the areas of budget development and financial management, stock management, personnel organization and training, formulary development, quantification of drug requirements, and procurement

April 1983 - November 1986
and January 1988 - July 1989

Presbyterian Medical Services (PMS)
Santa Fe, New Mexico

Director, Pharmacy Services Directed consultant pharmacy program and procurement service which provides pooled procurement, clinical pharmacy consulting, formulary development, drug use review, and drug information services to thirty-five rural health care projects in New Mexico, Texas, Arizona, Colorado, and Utah Program is responsible for procurement, repackaging, warehousing, and distribution of drugs for these programs through a national tender system Program trained pharmacy students from several universities in rural clinical pharmacy practice

July 1976-April 1983

Presbyterian Medical Services
Central Pharmacy
Taos, New Mexico

Coordinator, Special Projects and Drug Information Assisted Director in administration and financial management of PMS Central Pharmacy Developed and managed drug information center Coordinated and provided information and educational services for client hospitals and clinics Provided administrative and clinical consulting services to PMS clients Coordinated new program development, prepared funding proposals and program reports Coordinated and supervised purchasing and sales activities and reporting to regulatory agencies Developed system for automation of inventory management

February 1973-July 1976

Brotman Medical Center
Culver City, California

Pharmacy Supervisor Assisted Director of Pharmacy in management of program providing decentralized pharmacy services to 500 bed institution Developed and coordinated drug information and patient education services Developed pharmacy purchasing and inventory control system Developed pharmacy interface with hospital automated billing system Supervised seven support personnel and eight pharmacy student interns

SELECTED INTERNATIONAL CONSULTANCIES

Mexican Social Security Administration Designed assessment of pharmaceutical system performance in Mexican Social Security system, the largest single health system in Mexico Analyzed recurrent costs and produced models for estimating impact of various interventions on total variable costs (March-May, 1996)

Nicaragua MINSA Project Reviewed recurrent costs and financial performance in Nicaragua pharmaceutical procurement and distribution system, and provided suggestions for broadening use of generic drugs in public and private sectors (November, 1995)

Nigeria Essential Drugs Project Reviewed pharmaceutical procurement during seven years of

World Bank-supported project, identifying accomplishments and constraints, analyzing reasons for problems and offering recommendations for change (November, 1994)

Rational Pharmaceutical Management Project Ecuador Managed pharmaceutical sector assessment and designed RPM long-term intervention work plan in the technical areas of logistics/procurement, registration, and drug information/rational use (July-November, 1994) Russia Developed protocol of intent for collaboration with local parastatal and selection of implementation site for technical intervention (November 1993, February 1994) Russia Assisted in analyzing results of pharmaceutical sector assessment in Ryazan (July, 1994) Led pharmaceutical sector assessment in Ghana, and developed model for evaluating performance of independent revolving drug funds (July, 1993)

World Bank and MOH Ecuador Project Planning Unit Designed pilot pharmaceutical cost recovery pilot program featuring decentralized revolving drug funds, to be implemented with World Bank support (May 1992)

Ecuador Child Survival Project Developed equipment specifications and final list and criteria for procurement and distribution of medical equipment Managed procurement of vehicles and computers under USAID guidelines (January, 1992)

Honduras Health Sector Project Provided recommendations concerning strategies to increase use of generic drugs in the Honduras private sector (December, 1991)

Ecuador Child Survival Project Developed guidelines for procurement and distribution of medical and audiovisual equipment (November, 1991)

Ecuador Child Survival Project Developed comprehensive project procurement plan and helped develop a method to analyze the impact of alternate cholera case management strategies (June, 1991)

Euro Health Group/Danida Evaluated Kenya Essential Drugs Program, assessing ten year accomplishments and end-of-project status and advising Danida concerning ways to achieve sustainability (March, 1991)

Health Financing and Sustainability Project Prepared evaluation and action plan for Belize public sector pharmaceutical services (November, 1990)

Eastern Caribbean Regional Pharmaceuticals Management Project Completed four short-term consultancies developed spreadsheets for quantification, budget development and inventory management Provided and support to Eastern Caribbean Drug Service management (February 1988 - August 1989)

Nigeria Essential Drugs Project/World Health Organization Developed procurement procedures to

comply with World Bank international competitive bidding (June 1989)

Nigeria Federal Ministry of Health/ World Health Organization Assisted in program design of Essential Drugs Programme, synthesizing output of seven prior consultancies (July 1987)

Sierra Leone, West Africa Helped design and develop Policy and Procedure Manual for Central Medical Stores (November 1985)

Sierra Leone, West Africa Assisted World Bank team in assessment of Government of Sierra Leone proposal for improving primary health care (June - July 1985)

SELECTED DOMESTIC CONSULTANCIES

Management Sciences for Health Prepared analysis of pharmaceutical services in the Florida Medicaid Program and the Department of Health and Rehabilitative Services, and an impact analysis of "Pryor Act" provisions of OBRA-90 (April 1992)

Texas Association of Community Health Centers (TACHC) Developed pooled procurement program for the TACHC, including proposed state-wide drug formulary, and Policy and Procedures Manual Developed tender solicitation, assisted TACHC to collate and evaluate bids, and develop an appropriate procurement information (May-October 1986 and January, 1989)

Additional Consultancies for Bureau of Health Care Delivery (BHCD) Completed various consultancies involving assessment of pharmaceutical system performance and devising options for providing these services within BHCD quality and cost guidelines

Los Barrios Unidos Community Clinic, Dallas, Texas (December 1988)

Dallas Regional Office, Dallas, Texas (August 1988)

Martin Luther King Community Health Center, Dallas, Texas (October 1986)

Galveston County Coordinated Community Clinic, Lamarque, Texas (October 1986)

Su Clinica de Familia, Harlingen, Texas (July 1986)

Teche Action Clinic, Franklin, Louisiana (June 1986)

Hidalgo Country Health Care Corp, Pharr, Texas (November 1985)

Teche Action Clinic, Franklin Louisiana (July, 1985)

RECENT BOOKS, BOOK CHAPTERS, MANUALS AND MAJOR REPORTS

Rankin, J Engaging the private sector in the public pharmaceutical system Australian Prescriber, Volume 20, Supplement 1, 1997 107-112

Quick, J , Rankin, J , Laing, R , Oconnor, R , Dukes, MNG , Garnet, A , and Hogerzeil, H (Eds) Managing Drug Supply, Second Edition Hartford Ct, USA Kumarian Press, 1997

Rankin, J "Pharmaceutical Sector Assessment" in Managing Drug Supply, Second Edition Hartford Ct, USA Kumarian Press, 1997

Rankin, J and Quick, J "Managing Procurement" in Managing Drug Supply, Second Edition Hartford Ct, USA Kumarian Press, 1997

Rankin, J and Olson, C "Quantifying Drug Requirement" in Managing Drug Supply, Second Edition Hartford Ct, USA Kumarian Press, 1997

Rankin, J , Dias, V and Quick, J "Inventory Management Concepts" in Managing Drug Supply, Second Edition Hartford Ct, USA Kumarian Press, 1997

Rankin, J and Van Haperen, J "Managing the Tender Process" in Managing Drug Supply, Second Edition Hartford Ct, USA Kumarian Press, 1997

Rankin, J , Graaf, P , Dias, V and Quick, J "Analyzing and Controlling Drug Expenditures" in Managing Drug Supply, Second Edition Hartford Ct, USA Kumarian Press, 1997

Quick, J , Rankin, J , and Velasquez, G "Drug Supply Strategies" in Managing Drug Supply, Second Edition Hartford Ct, USA Kumarian Press, 1997

Lee, D , Rankin, J Miralles, M et al "Estudio de la Sistema de Abastecimiento de Medicamentos del Instituto Mexicano Del Seguro Social" Arlington, VA Management Sciences for Health, June 1996

Rankin, J and R Munshi, J-P Sallet and J Jones "Nigeria Essential Drugs Project Review of Pharmaceutical Procurement" Arlington, VA Management Sciences for Health, November, 1994

Rankin, J and Bates, J "Development and Test of LAC/HNS Pharmaceutical System Management Indicators Matrix Final Report " Washington, DC Latin America and Caribbean Health and Nutrition Sustainability Project, United States Agency for International Development, March, 1994

Rankin, J , Lee, D , Sallet, J P , Carikeo, J , Acuña, M , Puente, J , Aguilar, E , Larrea, G , Amadini, L , Byrd, D , Salazar, L "Sistema de Suministro de Medicamentos en el Ecuador, Evaluation y Propuesta de Reforma " Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, November, 1994

Rankin, J, J-P Sallet, K Johnson, D Lee, and D Ofori-Adjei "Ghana Pharmaceutical Sector Assessment Final Report " Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, August, 1993

Rankin, J "Country Assessment - Structured Survey Document" Arlington, VA Rational Pharmaceutical Management Project/Management Sciences for Health, April 1993

Rankin, J and R Calahorrano "Pilot Program for Public Sector Drug Cost Recovery in Ecuador " May, 1992

Rankin, J, R O'Connor, S Soumerai, and C Olson "Report on pharmaceutical services in Florida Medicaid and the Florida HRS Department, in the aftermath of OBRA-90 " April 1992

Rankin, J and J Korn "Final Report on the Kenya Essential Drugs Programme Recommendations for Future Cooperation Between Danida and the Kenya Ministry of Health " Danida/EuroHealth, Inc , March 1991

Rankin, J "Final Technical Report Eastern Caribbean Regional Pharmaceutical Management Project " Boston Management Sciences for Health, April 1991

Rankin, J "Pharmaceutical and Supply Procurement in Belize Technical Notes " Health Financing and Sustainability Project, January 1991

RECENT CONFERENCE PRESENTATIONS

Pharmaceuticals in Developing Countries. Regulation or Regularization? (Georgetown University) April, 1997 "Setting the Right Priorities"

International Conference on Improving Use of Medicines, Chiang Mai, Thailand (April, 1997) Moderator, session on drug cost recovery

Second International Meeting on Essential Drugs and Community Health Systems, Yangon, Myanmar (October, 1996) Provided expert commentary on six country program presentations and overview of MSH study of cost recovery programs in Nepal

WHO Action Programme on Essential Drugs - Informal Consultation on Evolving Public-Private Roles in the Pharmaceutical Sector, Geneva, Switzerland (April, 1996) Chairman, session on private mechanisms for public drug supply

World Bank Conference on the Role of the State in the Pharmaceutical Sector, Washington, D C (February, 1996) Co-chairman, session on state involvement in pharmaceutical distribution

American Public Health Association Annual Meeting, San Diego, California (October, 1995) "An Update on the Pharmaceutical Situation in Russia"

International Conference on National Medicinal Drug Policies, Sydney, Australia (October, 1995)
"Engaging the Private Sector in the Public Pharmaceutical System"

Man and Drugs Conference, Moscow, Russia (April, 1995) "Principles of Rational Pharmaceutical Management"

American Public Health Association Annual Meeting, Washington, D C (October, 1994) "Results of Indicator-based Pharmaceutical System Assessments"

Drug Information Association Annual Meeting, Washington, D C (June, 1994) "Supplier Selection - The Need for Procurement Information" and "Indicator-Based Measurement of Pharmaceutical Programs in Developing Countries"

American Public Health Association Annual Meeting, San Francisco, California (October, 1993)
"Rapid Assessment of the Pharmaceutical Sector in Developing Countries"

Swedish National Pharmacy Congress, Stockholm, Sweden (October, 1991) "Procurement in the Eastern Caribbean", and "Principles of Pooled Procurement"

USAID LA/C Bureau Regional Conference, Miami, Florida (September, 1991) "The Regional Pharmaceuticals Management Project", and "Indicators to Assess Pharmaceutical Systems"

World Pharmacy Congress, Washington, D C (September, 1991) "Pooled Procurement of Pharmaceuticals"

Conference on the Belize Essential Drugs Program, Belize City, Belize (November 15-16, 1990)
"Case Study - the Eastern Caribbean Drug Service"

Conference on Availability and Use of Therapeutic Agents and Vaccines, Rockefeller Conference Center, Bellagio Italy (April 14-20, 1990) "The MSH Drug Management Program and its activities in developing countries"

COMPENDIAL EXPERIENCE - United States Pharmacopoeial Convention

Member, Panel on International Health, Appointed 1990-95, 1995-2000
Chairman, Panel on Consumer Interest Elected 1980-85, re-elected 1985-90
Member, Executive Committee of Revision Appointed 1980-85, 1985-90
Member, Executive Committee, Drug Information Division Appointed 1980-85, 1985-90
Member, Executive Committee, Drug Standards Division Appointed 1980-85

HONORS Who's Who in the West, 1986, 1993 Who's Who, 1996

LANGUAGE SKILLS Read, speak and write Spanish (basic level)

SARAH V SCHULER

EDUCATION

BA College of William and Mary, Spanish Language and Literature, 1991

PROFESSIONAL EXPERIENCE

January 1995 - June 1997

Management Sciences for Health
Arlington, VA

Senior Program Assistant, Drug Management Program Provides administrative support to INRUD (International Network for Rational Use of Drugs) Network, and other cost-sharing DMP activities INRUD-related responsibilities include managing INRUD communication, monitoring the network's budget of \$450,000, coordinating logistics for the network's conferences and workshops, and managing production of *INRUD News* (production schedule, collecting material, printing and mailing) Also generates, edits, and formats DMP documents in both English and Spanish

June-November 1994

The Family Place
Washington, D C

Personnel/MIS Coordinator Worked at a nonprofit agency that provides comprehensive, preventive services to low-income Hispanic and African American women and children, seeking to improve child health and development Responsible for personnel matters, serving a staff of 34 Updated and maintained a computerized Participant Tracking System Coordinated publication of 1993 Annual Report wrote and edited text, prepared copy for printer, and supervised mailing

February-June 1994

Rural Capital Area Private Industry Council
Austin, TX

VISTA Volunteer Served on a parent education project in the rural counties around Austin Translated program materials into Spanish, as well as designed and prepared a bilingual program pamphlet Continued development of a parenting resource library for the program, and indexed that information

January 1992-November 1993

Equity Research Corporation
Washington, D C

Assistant to the President Worked closely with the president of a private, nonprofit educational consulting firm that promotes the development and enhancement of educational opportunities for Hispanics and other minorities Acted as liaison for clients with congressional offices and federal agencies Researched federal government for funding possibilities to support post-secondary educational programs in U S mainland, Puerto Rico, and Latin America, and assisted in writing proposals Oral and written communication with clients conducted in both Spanish and English Responsible for supervising office in absence of President

LANGUAGE SKILLS

Spanish excellent

COMPUTER SKILLS

Intermediate level of knowledge in Windows, WordPerfect, Quattro Pro, Presentations, and PageMaker 5.0

CONSULTANTS

CURRICULUM VITAE:

1 Personal Data

NAME Guttorm FOLKEDAL

BIRTH DATE and PLACE [REDACTED]

NATIONALITY Norwegian

Working Adress

Private

Sjukehusapoteket Tel 47-52732581, [REDACTED]
5500 HAUGESUND, NORWAY Fax 47-52732587 [REDACTED]
tel /fax 47-52851109 [REDACTED] [REDACTED]

2 SOME ACADEMIC AND PROFESSIONAL QUALIFICATIONS

- 1 M Sc, in Pharmacy, University of Oslo 1978
- 2 School of Trade, 1980
- 3 Specialist in Hospital Pharmacy - 1991, The Norwegian Association of Pharmacists
- 4 Postgraduate Courses, University of Oslo Hospital Pharmacy (1981)
 - 5 Parenteral Liquid Administration (1983)
 - 6 Pharmacy Economics (1985)
 - 7 Pharmacy in Developing Countries (1986)
 - 8 Pharmacy Administration (1988)
 - 9 Communication and Presentation Techniques (1989)
 - 10 Drug Committee Activities (3 courses)
 - 11 Professional Advising and Counselling (1995)
 - 12 Pharmacoepidemiology and Medical statistics (1996)
- 13 Burroughs Wellcome C E 20 programmes in clinical pharmacy for US Association of Health System Pharmacy
- 14 Course for NORAD experts - "Working in the 3rd World" (1991) (10 weeks)
- 15 Management Sciences for Health - Boston "Drug Management in Primary Health Care" 1992, (6 weeks)
- 16 MSH / WHO- Drug Action Programme "Promoting Rational Drug Use" Harare 1993 2 weeks
- 17 Languages Speak and write Norwegian, English and Portuguese fluently, speak German reasonably and French fairly

3 INTERNATIONAL ACTIVITIES

- 1 Speaker at the Pharmacy Information Session - FIP - World Congress of Pharmacy in Stockholm in August-95 «Rational Drug Use in Maputo Province Achievements within a Centralised System A Mozambican Experience» Also published in INRUD-NEWS, 4-94
- 2 NORAD Desk Study «Solar Cell Power Supply and Cold Chain Security in Mozambique PHC» 01-96
- 3 Team member for USAid/Management Sciences for Health's «Rational Pharmaceutical Management Project in Mozambique», July-95
- 4 Guest speaker and facilitator for WHO on the Conference for Essential Drug Programmes in Central and Eastern Africa held in Lilongwe/ Malawi , June-94 (Subject - «Donor Co-ordination»)
- 5 Guest speaker at the National conference for South African Association of Hospital & Institutional Pharmacists (SAHIP) in March - 94/Pretoria «Drug Utilisation and Statistics in Mozambique», and «Specialisation in Hospital Pharmacy - a Norwegian Model»

- 6 Employed during 31 months in Mozambique (see employment record)
- 7 Presentation of a poster at the Hospital Pharmacy Section for FIP in Sydney 1988 "Clinical Evaluation of AMINODOS, a Microcomputer Programme for precise, individual Monitoring of Amino Glycoside Antibiotics"
- 8 Participant in a project establishing contact and co-operation between a Norwegian and Polish Hospital Visit and field trip included

4 EMPLOYMENT RECORD (in reverse order)

- 01-95 - Consultant for «LIS» - an office organising drug tendering for a major part of Norwegian provinces Representing 76 hospitals/ and a procurement power of more than 100 million USD/year Head of «LIS»-board, Nov -96
- 06 - 07/95 USAid/MSH Trainer in Drug Management/Rational Use for Provincial Health Administrators in Moz Trying the first MSH -Training module for a Portuguese language setting
- 09 94 - Hospital Pharmacy Director The Provincial Hospital of Haugesund
- 01 92 -09 94 Senior Pharmacist in Mozambique, financed by NORAD Work in MOH /Pharm Dep and the parastatal Medimoc Active in all parts of the drug distribution system, imports and tendering, CMS-handling, provincial and district distribution, rational drug use, quality control and assessment, procurement strategies, establishing the «VEN »classific system etc
- 3 86 - 1 92 Hospital Pharmacy Director The Hospital Pharmacy of Haugesund
- 8 79 - 3 86 Principal pharmacist The Provincial Hospital of Haugesund
- 8 83 -12-83 Army brigade pharmacist - Troms, Northern Norway
- 6 81 - 1 92 Head of Drug Use Supervision and Information - Northern part of Rogaland Province
- 8 78 - 8 79 Principal pharmacist in the retail pharmacy "Nordstjernen" - Oslo
- 1979 - 97 Teacher in Pharmacology in Haugesund School for Nurses (40 hours/year)
- 1985 - 96 Different activities as speaker, included teaching and counselling

5 FAMILY - HOBBIES

Married, 3 children aged between 9 and 16 years Hobbies Music (play trumpet and flute, singing and choir conducting), physical training, currently tennis and bicycling Active in the Lutheran Church of Norway

HILBRAND HAAK, MD, MPH

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Jalan Pringgading 6
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Alternative address
72A Korreweg
9715AE Groningen
THE NETHERLANDS
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Nationality Netherlands
Date of birth [REDACTED]
Languages Fluent in Dutch, English, Spanish, Portuguese and German
Fair knowledge of French, Italian and Indonesian
Additional skills Advanced understanding of computer hardware and software

Education

- 1992-1993 HARVARD SCHOOL OF PUBLIC HEALTH, Boston, MA, USA
Master of Public Health degree (International Health)
- Fall 1988 ROYAL TROPICAL INSTITUTE, Amsterdam, The Netherlands
National Course in Tropical Medicine and Hygiene
- 1978-1986 UNIVERSITY OF GRONINGEN, Groningen, The Netherlands
MD degree
- 1972-1977 HIGHER TECHNICAL SCHOOL OF GRONINGEN, Groningen, The Netherlands
Electrical engineering degree and license in Electronics

Professional Experience

- 1991-1992 WORLD HEALTH ORGANIZATION, Geneva, Switzerland *Medical Officer (P-4)* Programmes for Control of Diarrhoeal Diseases (CDD) and Acute Respiratory Infections (ARI) Developed *Guide to Improve Rational Use of Drugs in Diarrhoea* for use by national CDD programmes Supervised preparation of RUD action plans by developing countries CDD staff Assisted national CDD/ARI staff in comprehensive programme evaluations Surveyed drug dispensing and prescribing patterns in African and Asian countries Instructed courses in CDD/ARI Programme Management and Supervisory Skills in Latin America, Africa and Asia Presented at conferences on CDD, ARI and RUD
- 1989-1991 PAHO / WORLD HEALTH ORGANIZATION, Lima, Peru *Associate Professional Officer* Programmes for CDD and ARI Assisted CDD and ARI programme managers in a variety of programme activities training, evaluation, ORS supply, development of standard treatment guidelines, and conferences Edited technical review documents series on drug use topics and maternal/child health
- 1988-1989 WORLD HEALTH ORGANIZATION, Geneva, Switzerland *Consultant* Action Programme on Essential Drugs (DAP) Evaluated the use of Drug Ration Kits in 12 Asian and African countries Reviewed global literature and working papers, conducted survey of national Essential Drugs Programmes, NGOs and drug suppliers via questionnaire, with subsequent computerized data analysis Results published as an official WHO document Prepared scientific publications
- 1986-1988 ST BARBARA HOSPITAL, Geleen, The Netherlands *Resident* Surgery, Gynaecology/Obstetrics, Orthopaedics departments Held responsibilities for outpatient departments, wards and emergency department Performed emergency and elective surgical procedures
- 1986 UNIVERSITY OF GRONINGEN, Medical School, Groningen, The Netherlands *Researcher* Brazil Conducted medical anthropological research on the use of pharmaceuticals in two rural communities in Bahia state Collected and reviewed existing Brazilian literature Analyzed the data and published results in national and international journals

Participation in international meetings

1989	Uruguay	Workshop of CDD advisors in PAHO region
1990	Venezuela	Workshop of national ARI programmes of Andean region
	Indonesia	Inaugural meeting of International Network of Rational Use of Drugs (INRUD) in Yogyakarta
		First WHO/INRUD course on promoting rational use of drugs
1993	Indonesia	Third annual meeting of INRUD in Yogyakarta
1994	Indonesia	Trainer in 3rd WHO/INRUD Asia Regional Course on promoting rational use of drugs

Short-term international assignments

1990	Guatemala	Facilitator regional ARI programme manager's course
1991	Bangladesh	Facilitator national CDD programme manager's course
	Sudan	Facilitator national CDD programme manager's course
	Nigeria	Organization national seminar on inappropriate drug use in diarrhoeal diseases Preparation of plan of action
	Bangladesh	Focused Programme Review national CDD programme with responsibilities for research of drug use practices
1992	Philippines	Organization of workshop on inappropriate drug use in diarrhoeal diseases, in collaboration with national paediatric association Preparation of plan of action
	Sudan	Review of national CDD plan of action
	Sri Lanka	Focused Programme Review of national CDD programme with responsibilities for research of drug use practices Preparation of plan of action
1993	El Salvador	Training of basic health workers in field methods of epidemiology Member of delegation of Harvard School of Public Health
	Bangladesh	Preparatory visit for drug policy evaluation study (Management Sciences for Health)
	Mozambique	Comprehensive assessment of pharmaceutical sector Evaluation of National Essential Drugs Programme and distribution system of drug ration kits (Management Sciences for Health/USAID)
1994	Indonesia	Study of drug use and drug pricing in Indonesia (Harvard Institute for International Development (HIID))
	Kyrgyzstan	Assessment of emergency needs for drugs and medical supplies (Eurohealth/DANIDA)
	Russia	Assessment of pharmaceutical sector Ryazan oblast (Management Sciences for Health/USAID)
	Malawi	Mid-term review of Malawi Essential Drugs Program (World Bank/WHO/DGIS) Team leader

Publications

- 1 Haak H Pharmaceuticals in two Brazilian villages lay practices and perceptions *Social Science and Medicine* 27(12), 1415-1427, 1988
- 2 Haak H, Hardon AP Indigenised pharmaceuticals in developing countries widely used, widely neglected *Lancet* 620-621, 10 September, 1988
- 3 Haak H Padrões de consumo de medicamentos em dois povoados Bahianos *Revista Saude Publica de São Paulo* 23(2), 143-151, 1989
- 4 Haak H, Hogerzeil HV *Drug supply by ration kits* WHO Drug Action Programme, Geneva, WHO/DAP/91 2, 1991
- 5 Haak H, Groothoff JW, ten Berge-Van-der-Schaaf J Medicijngebruik bij leerlingen van het vervolgonderwijs in Haren (Gr) een oriënterend onderzoek *Tijdschrift voor Sociale Gezondheidszorg* 65(16), 439-440, 1987
- 6 Haak H Rationeel geneesmiddelengebruik in de Derde Wereld ook een taak voor tropenartsen *Medisch Contact* 44(7), 228-230, 1989
- 7 Savelli A, Haak H *Mozambique pharmaceutical sector assessment* Ministry of Health Mozambique/Management Sciences for Health, Boston, January 1994
- 8 Paredes P, Haak H Peru a major drive to rationalize treatment of diarrhoea. *Essential Drugs Monitor* 10, 19, 1990
- 9 Paredes P, Haak H Peru coordinated action in inappropriate use of drugs for childhood diarrhoea *Dialogue on Diarrhoea* 42, September, 6-7, 1990
- 10 Cruz H, Paredes P, Haak H (eds) *Medicamentos inapropiados en diarrea la magnitud del problema* PAHO/WHO, Lima, Peru, Col Científica N° 1, 1989
- 11 Barua L, Paredes P, Haak H (eds) *Avances recientes en control de la disenteria en el Peru* PAHO/WHO, Lima, Peru, Colección Científica N° 2, 1990
- 12 Gayoso Villafior VA, Paredes P, Haak H (eds) *El uso de los medicamentos en el Peru* PAHO/WHO, Lima, Peru, Colección Científica N° 3, 1990
- 13 Haak H, Paredes P (eds) *La lactancia materna en el Peru estado actual y proyecciones* PAHO/WHO, Lima, Peru, Colección Científica N° 4, 1991

WILLIAM C NEWBRANDER

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Geneva
Switzerland

Business Phone
(41)(22) 791-2566

EDUCATION

- 1979 – 1983 **DOCTOR OF PHILOSOPHY** in Medical Care Organization with concentration in Health Economics, Department of Medical Care Organization, School of Public Health, The University of Michigan, Ann Arbor, Michigan. Major areas of study and research health economics, hospital systems evaluation and hospital performance Indicators.
- 1979 – 1981 **MASTERS OF APPLIED ECONOMICS** Department of Economics, The University of Michigan, Ann Arbor, Michigan.
- 1973 – 1975 **MASTERS OF HOSPITAL ADMINISTRATION** Program In Hospital Administration, School of Public Health, The University of Michigan, Ann Arbor, Michigan.
- 1969 – 1973 **BACHELOR OF ARTS** in Economics. Wheaton College, Wheaton, Illinois.

COUNTRY EXPERIENCE

- Long term USA (1975-1983), Saudi Arabia (1983-84), Papua New Guinea (1985-1988), Thailand (1988-90), Switzerland (1990-1992)
- Short term Missions Ethiopia, Egypt, Ghana, Haiti, Namibia, USSR, Yugoslavia.

PROFESSIONAL EXPERIENCE

March **WORLD HEALTH ORGANIZATION**
1985-Present

Health Economist, WHO Headquarters, Geneva (June 1990 - Present) Identified key issues and developed position paper on hospital economics and financing for developing countries. Co-authored UNICEF-WHO Joint Committee on Health Policy Paper "Management of the District Health System on Primary Health Care." Served as WHO Mission Team Leader for mission to Namibia on health manpower planning. Undertook WHO missions to Ethiopia, Ghana, USSR and Yugoslavia concerning health system financing issues. Conducted training courses in health economics for students from developing countries. Coordinated annual meetings of "Informal Group of International Agencies Involved in Health Economics" Developed tools and conducted training courses for cost analysis of hospitals. Conducted applied research in health economics and public/private health sector mix. Advised WHO technical program areas concerning economic aspects of health activities.

Program Management Officer, WHO Thailand Office (December 1988 - June 1990) Served as Acting WHO Country Representative for extended period. Coordinated WHO and international donors' support of national AIDS program. Conducted training programs in information systems, health economics and hospital management. Advised

WILLIAM C NEWBRANDER'S PUBLICATIONS

BOOKS

Thomason J W Newbrander, and R-L Kolehmainen Arken 1991 Decentralization in a Developing Country The Experience of Papua New Guinea and Its Health Service Canberra The Australian National University Press

This includes co-authorship of the following chapters in the book

- * "Introduction"
- * "Performance of the Health System Under Decentralization"
- * "Health Financing and Budgeting"
- * "Management of a Decentralized Health System"
- * "Decentralization of Health Services in Papua New Guinea A Critical Review"

ARTICLES

Newbrander, W, H Bamum, and J Kutzin 1992 "Hospital Economics and Financing in Developing Countries," WHO Document WHO/SHS/NHP/92.2 Geneva World Health Organization

Newbrander, W and D Parker 1992 (forthcoming) "The Public and Private Sectors in Health Economic Issues," International Journal of Health Planning and Management

Thomason, J and W Newbrander 1991 "A Survey of Papua New Guinea's Health Sector Financing and Expenditure," Papua New Guinea Medical Journal, 34(2) 45-59

Thomason, J and W Newbrander 1990 "Challenges of Maintaining a Management Development Programme," Public Administration and Development 10

Newbrander, W and S Orzeszyna 1990 "Improving the Quality of Life in South-East Asia through Health Economics," Special issue of Journal of Sociology and Anthropology, Thammasat University, Thailand

Newbrander, W and J Thomason 1989 "Alternatives for Financing Health Services in Papua New Guinea," Health Policy and Planning 4(2) 131-140

Campos-Outcalt D and W Newbrander 1989 "Decentralization of Health Services in Papua New Guinea," Health Policy and Planning 4(4) 5-11

Chae, Y, W Newbrander, and J Thomason 1989 "Application of Goal Programming to Improve Resource Allocation for Health Services in Papua New Guinea," International Journal of Health Planning and Management, 4(2) 81-95

Newbrander, W et al 1988 "Managerial Support for Provinces A Programme for Developing Provincial Health Management Capabilities," International Journal of Health Planning and Management, 3(1) 45-55

Newbrander, W and D Campos-Outcalt. 1988 "Trends in the Nationalization and Qualifications of Papua New Guinea's Provincial Assistant Secretaries for Health," Papua New Guinea Medical

STEPHEN A. REED III

American citizen born 1942, resident of St. Lucia

EDUCATION

B.A. Bowdoin College 1964, Physics and Mathematics

PROFESSIONAL EXPERIENCE

1987 to present Tropical Software & Computer Power
St. Lucia W.I.

Principal & Director: Specialize in writing and installing multi-user database computer software that is designed for the special needs of companies in the Caribbean; programs are generally developed for St. Lucian companies and later marketed throughout the Caribbean. Our expertise is in inexpensive and functional DOS based computers and networks. These computers are the most practical for developing countries as more exotic systems require outside expertise which most likely is not locally available.

Our company currently has four programmers with varying experience currently developing projects being used in St. Lucia and other developing countries.

Beginning in 1996 our company became heavily involved in using the internet in developing our software business. We are currently marketing a small hotel management package over the internet with our own Homepage. The address of this page is:

<http://www.4tropical.com>

Recently I have begun to develop programs for the windows environment using Visual Basic and Visual Dbase.

Examples of programs developed include:

- 1) **Hotel Reservations and Marketing** with extensive information about current and future reservations and with marketing information about tour operators and travel agencies; system operates within multi-user environment and is suitable for large hotels; billing package has been created which allows charging guest accounts from the point of sale by computers placed in strategic locations such as the bar and the restaurant; currently being used by 30 Caribbean hotels.

STEPHEN A. REED III

- 2) **Inventory and Accounts Receivable** has a special feature for purchasing in multiple currencies (a common Caribbean issue), determination of landed costs, and calculation of consumption taxes for manufacturing; a special module handles bill of material processing; currently being used by 4 businesses in St. Lucia.
- 3) **Tour Operators** program tracks clients and provides billing functions; a reservation program provides tracking of tours sold to guests at local hotels.
- 4) **Public Tendering and Procurement** program for Eastern Caribbean Drug Service (ECDS) solicits price quotations and other relevant factors on hundreds of pharmaceutical products from dozens of suppliers, sorts for adjudication and award of contracts, tracks orders made by 7 Ministries of Health in region; responsible for reprogramming, training, and troubleshooting. Will soon to be contracted to provide a major upgrade to the functionality of the software under a USAID consultancy,
- 5) **INVEC Central Medical Stores Inventory** program currently being used by five Caribbean Governments and several African Countries.
This program was written by myself and Tropical Software in collaboration with MSH. The program provides all the necessary information and reports to effectively manage a government central medical warehouse.
- 6) Spring of 1993 in conjunction with MSH went to Jakarta, Indonesia on a two week consultancy to further develop INVEC and other software for the government of Indonesia.

In the fall of 1993 spent two weeks in Zimbabwe working with John Kammersgard introducing him to INVEC and the programming language use to develop the current version of the software. This was on a contract with MSH and DANIDA,

Have continued to consult with MSH on INVEC and to make modifications to the software as required.

Fall of 1995, in conjunction with MSH spent 3 weeks in Phnom Penh, Cambodia modifying and installing INVEC. This was followed with another 3 weeks in the winter of 1996. The program is now currently being used with another followup visit scheduled in the spring of 1997. The consultancies were funded by the World Bank under a contract with MSH.

STEPHEN A. REED III

- 7) Recently working with ECDS in providing an information system to allow analysis of the prescribing habits of the local doctors, government and private, in relation to diabetes and hypertension.
- 8) Other programs include a paint company production tracking system. An inventory system for a local ice cream manufacturer. Production systems for a spice production company, and a program to schedule therapy sessions and classes for the local spa hotel. Recently developed a scheduling program for the local helicopter company.
- 9) Development generally for DOS Networks using Clipper as the programming language. By using a number of libraries of commercial system routines to create software for the normally inexperienced user of the systems.

1983 - 1987

Software Engineer: Created a software system for two hotels in St. Vincent that provide all reservations and accounting functions necessary for efficient operations.

1977 - 1979

GTE Sylvania, Belgium

Consultant: Created and installed software for a large mini-computer system that monitored the production of light bulbs and photoflash bulbs.

1968 - 1977

GTE Sylvania, Manchester & Hillsboro, NH

Senior Engineer: Installed manufacturing computer system to monitor plant activity; responsible for production activities of miniature lamp department with sales of over five million dollars annually.

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CURRICULUM VITAE

Name Dennis G Ross-Degnan
Address Dept of Ambulatory Care and Prevention, Harvard Medical School
126 Brookline Avenue Suite 203, Boston, MA 02215
Birth Date [REDACTED]

Education:

1972 B A Department of Psychology, Boston College, Chestnut Hill, MA
1979 M.S Department of Health Policy and Management Harvard School of Public Health, Boston, MA
1987 Sc D Department of Health Policy and Management, Harvard School of Public Health Boston MA

Academic Appointments

1972-1974 Research assistant, Laboratory of Psychosocial Studies, Boston College
1978-1979 Teaching Assistant in Statistics for Health Policy and Management Harvard School of Public Health
1979-1980 Research fellow in nutrition planning and evaluation Dept of Community Health University of Nairobi
Medical School, Nairobi, Kenya
1987-1992 Instructor in Social Medicine Department of Social Medicine Harvard Medical School
1992-1993 Assistant Professor Department of Social Medicine, Harvard Medical School
1993-1995 Visiting Fellow, Inter University Center Gadjah Mada University, Yogyakarta Indonesia
1993- Assistant Professor, Department of Ambulatory Care and Prevention Harvard Medical School and
Harvard Community Health Plan
1993- Visiting Fellow, Discipline of Clinical Pharmacology, Faculty of Medicine Univ of Newcastle
Waratah, New South Wales, Australia

Professional Positions

1974-1977 Child care worker, New England Home For Little Wanderers, Boston, MA
1980-1981 Health planner, Kenya Rural Blindness Prevention Project Nairobi, Kenya (for International Eye
Foundation, Bethesda, MD)
1982-1983 Worksite health services coordinator, York County Health Services Saco ME
1983-1984 Project director, National Survey of Eye Disease, King Khaled Eye Hospital, Riyadh Saudi Arabia (for
International Eye Foundation, Bethesda, MD)
1988-1991 Co-Investigator study on the unintended clinical outcomes of Medicaid drug payment limits funded by
NCHSR
1989-1992 Co-Principal Investigator, NIMH-funded study on the impact of drug payment caps on health services
use by the chronically mentally ill
1989- Principal Investigator of grants to develop and coordinate scientific aspects of the International Network
for Rational Use of Drugs funded by the Pew Charitable Trusts and the Danish International
Development Agency
1990- Principal Investigator WHO/Control of Diarrhoeal Disease Programme project to design and test a
model intervention (Kenya, Indonesia) to improve diarrhea treatment by drug sellers
1992-1995 Principal Investigator, Robert Wood Johnson Foundation study on policy determinants and information
needs of Medicaid pharmaceutical programs
1994-1995 Principal Investigator, methodological project supported by the Milton Fund and the Applied Diarrheal
Disease Research Project on the use of time series methods for evaluating the impact of interventions to
improve pharmaceutical use

Consulting Positions

- 1978 Planning Consultant, United Way of Greater Portland and Dept of Community Medicine Maine Medical Center, Portland, ME
- 1978-1979 Evaluation Consultant, Cambridge Council on Aging, Cambridge MA
- 1982-1983 Consultant to Bureau of Health, Maine Dept of Human Services, Augusta ME on information systems and survey analysis
- 1982-1983 Consultant to Drug Information Program, Harvard Medical School on statistics and data systems
- 1984-1987 Consultant to Program for the Analysis of Clinical Strategies, Harvard Medical School, on statistics and data systems
- 1985, 1987 Consultant to Prevention of Blindness Programme, World Health Organization on research protocol design
- 1986- Consultant to Management Sciences for Health Boston MA on research design project evaluation drug sector assessment, health data systems (Indonesia Nepal Honduras Kenya)
- 1992- Consultant to Control of Diarrhoeal Disease Programme WHO Geneva Switzerland on research design (Univ of Pelotas, Brazil)

Awards and Honors

- 1968-1972 Presidential Scholarship, Boston College
- 1971-1972 Scholar of the College, Boston College
- 1977-1979 Kellogg Fellow, Harvard School of Public Health
- 1979-1980 Sinclair Kennedy Traveling Fellow University Of Nairobi
- 1984-1986 International Eye Foundation Fellow, Harvard School of Public Health
- 1991 Article of the Year Award, Association for Health Services Research

Editorial Responsibilities

- 1990-1993 Reviewer of research proposals for Applied Diarrhea Disease Research Project Harvard Institute for International Development
- 1991- Reviewer of manuscripts for Journal of the American Medical Association
- 1992 Reviewer of research proposals, WHO Control of Diarrhoeal Disease Programme
- 1992 Reviewer of books for Health Affairs
- 1993 Reviewer of books for Oxford University Press
- 1994-1995 Reviewer of manuscripts for Indonesian Journal of Clinical Epidemiology
- 1995- Reviewer of manuscripts for Pharmacoeconomics

Memberships in Professional Societies and Committees

- 1978- American Public Health Association
- 1984- National Council for International Health
- 1992- International Drug Policy Committee, American Public Health Association
- 1993 Technical Advisory Group for USAID-funded project on Rational Management of Pharmaceuticals

Research Interests

- 1 Behavioral interventions to improve quality of care and supervisory skills in developing countries
- 2 Determining the impact of health policies on use of health services and on clinical outcomes
- 3 Developing and assessing simplified methodologies for studying drug utilization in developing countries
- 4 Program evaluation, research design, and economic analysis of health services

Teaching Experience

- 1978-1979 Teaching assistant in biostatistics and quantitative methods for decision making Harvard School of Public Health
- 1979-1980 Lecturer in biostatistics and research methods, Department of Community Health University of Nairobi Medical School
- 1983 Lecturer in biostatistics, University of New England Nursing Program, Biddeford ME
- 1988- Doctoral research advisor for doctoral candidates in health policy and management, and in population sciences, Harvard School of Public Health
- 1988- Lecturer in research methods and evaluation of pharmaceutical interventions for International Network for Rational Use of Drugs
- 1988-1993 Guest lecturer in program evaluation, epidemiology field methods, and pharmaceuticals in developing countries Harvard School of Public Health
- 1990 Faculty for Veterans Health Services and Research Administration Drug Use Evaluation National Training Program on improving drug therapy
- 1991-1993 Research Advisor for Fellows of the Takemi Program Harvard School of Public Health
- 1993- Faculty for Managing Health Programs in Developing Countries in program evaluation Harvard School of Public Health
- 1993-1995 Guest lecturer in research methods and proposal development (Faculty of Psychology), and quantitative and qualitative research methods for behavioral epidemiology (Faculty of Medicine) Gadjah Mada University, Yogyakarta, Indonesia
- 1994-1995 Guest lecturer in research methods and pharmacoepidemiology University of Newcastle Australia

Bibliography

Original Articles

- 1 Ross-Degnan D Schwab L and Mburu F Field methodology for ocular surveys in rural Africa Soc Sci Med 1983, 17(22) 1793-1796
- 2 Whitfield R, Schwab L, Bakker N Bisley G, and Ross-Degnan D Cataract and corneal opacity are the main causes of blindness in the Samburu tribe in Kenya Ophthal Surg 1983, 14(2) 139-144
- 3 Tabbara K, Ross-Degnan D Blindness in Saudi Arabia J Am Med Assoc 1986 255(24) 3378-3384
- 4 Tabbara K, Ross-Degnan D Trachoma in Saudi Arabia Results from a national eye examination survey Archives Ophthalmol 1986 (accepted for publication but withdrawn at the request of the Government of Saudi Arabia)
- 5 Soumerai SB, Avorn J, Ross-Degnan D, and Gortmaker S Payment restrictions for prescription drugs in Medicaid Effects on therapy, cost, and equity N Engl J Med 1987, 317 550-6
- 6 Mason RP, Kosoko O Wilson MR, Martone JF Cowan CL Gear J Ross-Degnan D National Survey of the Prevalence and Risk Factors of Glaucoma in St Lucia, West Indies Part I Prevalence Findings Ophthalmology 1989, 96(9) 1363-68
- 7 Gurwitz JH, Avorn J, Ross-Degnan D, Lipsitz LA Nonsteroidal anti-inflammatory drug-associated azotemia in the very old J Am Med Assoc 1990, 264(4) 471-475
- 8 Lang RO, Ross-Degnan DG Report on the inaugural meeting of the International Network for Rational Use of Drugs J Soc Admin Pharm 1990 7(3) 144-146
- 9 Soumerai SB, Ross-Degnan D Experience of state drug benefit programs Health Affairs 1990 9(3) 36-54
- 10 Soumerai SB, Ross-Degnan D Gortmaker S Avorn J Withdrawing payment for non-scientific drug therapy Intended and unexpected effects of a large-scale natural experiment J Am Med Assoc 1990 263(6) 831-839
- 11 Whitfield R Schwab L Ross-Degnan D Steinkuller P and Swartwood J Blindness and eye disease in Kenya Ocular status survey results from the Kenya Rural Blindness Prevention Project Brit J Ophthalmol 1990 74 333-40

- 12 Soumerai SB, Ross-Degnan D, Avorn J, McLaughlin TJ, Choodnovskiy I Effects of Medicaid payment limits on admissions to hospitals and nursing homes *N Engl J Med* 1991, 325 1072-1077
- 13 Quick JD, Laing RO, Ross-Degnan DG Intervention research to promote clinically effective and economically efficient use of pharmaceuticals The International Network for Rational Use of Drugs *J Clin Epidem* 1991, 44, Supplement II 57S-65S
- 14 Gurwitz JH, Avorn J, Ross-Degnan D, Choodnovskiy I, Ansell J Aging and the anticoagulant response to warfarin therapy *Archives of Internal Medicine* 1992, 116 901-904
- 15 Soumerai SB, Ross-Degnan D, Kahn JS The effects of professional and media warnings about the association between aspirin use in children and Reye's Syndrome *Milbank Quarterly* 1992, 70 (1) 155-182
- 16 Avorn J, Soumerai SB, Everitt DE, Ross-Degnan D, Beers MH, Sherman D, Salem-Schatz SR, Fields D Restraining psychoactive drug use in nursing homes effects of a randomized trial on medication utilization and cognitive function *New Engl J Med* 1992, 327(3) 168-173
- 17 Ross-Degnan D, Laing R, Quick J, Ali HM, Ofori-Adjei D, Salako L, Santoso B A strategy for promoting improved pharmaceutical use The International Network for Rational Use of Drugs *Soc Sci Med* 1992 35(1) 1329-1341
- 18 Soumerai SB, Ross-Degnan D, Fortess EE, Abelson J A critical analysis of studies of state drug reimbursement policies *Research in need of discipline Milbank Quarterly* 1993 71(2) 217-252
- 19 Ross-Degnan D, Soumerai SB, Fortess EE, Gurwitz J Examining product risk in context Market withdrawal of zomepirac as a case study *Jl Amer Med Assoc* 1993, 270(16) 1937-42
- 20 Soumerai SB, Salem-Schatz SR, Avorn J, Casteris CS, Ross-Degnan D, Popovsky MA A controlled trial of educational outreach to improve blood transfusion practice *J Am Med Assoc* 1993, 270(8) 961-66
- 21 Hogerzeil HV, Bimo, Ross-Degnan D, Laing RO, Ofori-Adjei D, Santoso B, Chowdhury AKA, Das AM, Kafle KK, Mabadeje AFB, Massele AY Field tests for rational drug use in twelve developing countries *Lancet* 1993, 342 1408-10
- 22 Soumerai SB, McLaughlin TJ, Ross-Degnan D, Casteris CS, Bollini P Impact of a Medicaid drug benefits limit on use of psychotropics and acute mental health care among schizophrenic patients *N Engl J Med* 1994 331 (10) 650-655
- 23 Ross-Degnan D, Soumerai SB, Avorn J, Bohn RL, Bright RA, Aledort L Hemophilia home treatment A case study to explore the contributions of economic analysis to policy-making *Intl J Tech Assess in Health Care* 1995 11 (2) 327-344
- 24 Schwab L, Whitfield R, Ross-Degnan D, Steinkuller P, Swartwood J, Study Survey Group The epidemiology of trachoma in rural Kenya Variation in prevalence with lifestyle and environment *Ophthalmology* 1995 102 (3) 475-482
- 25 Goel P, Ross-Degnan D, Reich M, Berman P, Soumerai S Retail pharmacies in developing countries A behavior and intervention framework *Soc Sci Med* 1995 (accepted for publication)
- 26 Ross-Degnan D, Soumerai S, Goel P, Bates J, Makhulo J, Dondi N, Sutoto, Daryono A, Ferraz-Tabor L, Hogan R A controlled trial of the impact of persuasive face-to-face education on diarrhea treatment in pharmacies in two developing countries 1995 (submitted for publication)
- 27 Ross-Degnan D, Soumerai SB, Long S, Hawley S Do state Medicaid formularies contain costs? Impacts of formulary changes on health care expenditures between 1980 and 1990 1995 (submitted for publication)
- 28 Walser B, Ross-Degnan D, Soumerai S Did eliminating restrictive formularies from state Medicaid programs improve access to important medications? 1995 (submitted for publication)

Editorials, Chapters, Commentaries, and Reviews

- 1 Ross-Degnan D Epidemiology of ocular infections In Tabbara KF and Hyndiuk RA *Infections of the Eye* Boston, Little, Brown and Company 1986

- 2 Soumerai SB, Ross-Degnan D. Drug prescribing in pediatrics: challenges for quality improvement [commentary]. *Pediatrics* 1990, 86(5): 782-784.
- 3 Ross-Degnan D. From confrontation to dialogue: Pharmaceutical politics in the 1990's. Review of Silverman M, Lydecker M, Lee PR. *Bad Medicine: The Prescription Drug Industry in the Third World* (1992, Stanford, California: Stanford University Press). *Health Affairs* 1993; 12(2): 208-210.
- 4 Ross-Degnan D, Soumerai SB, Fortess EE, Gurwitz J. Withdrawal of a drug from the market: What should the prescriber do? [letter]. 1994, 272 (16): 1253.

Research Reports

- 1 Ross-Degnan D, Soumerai SB. Final evaluation report of the Cambridge Elderly Hot Lunch Program. City of Cambridge, MA and the Title VII Nutrition Project Council, 1979.
- 2 Quick JD, Foreman P, Ross-Degnan DG, Kempner D, O'Connor R, Sacca S. Child survival pharmaceuticals in Nepal: Opportunities for expanded supply and improved use of pharmaceuticals. *Management Sciences for Health* 1988.
- 3 Quick JD, Foreman P, Ross-Degnan DG, et al. Where does the tetracycline go? Health center prescribing and child survival in Indonesia. *Management Sciences for Health* 1988.
- 4 Ross-Degnan D, Soumerai SB, Long S, Hawley S. Feasibility of using aggregate annual data for evaluating the impacts of Medicaid cost containment policies. *Health Care Financing Administration*, 1993.

Abstracts

- 1 Ross-Degnan D, Whitfield R. The use of computers for primary data capture in a large scale field setting. *Public Health Conference on Records and Statistics* 1985.
- 2 Quick J, Ross-Degnan D, Bimo, Santoso B. Why scabies kills: Pharmaceutical misallocations and child survival. *American Public Health Association Annual Meeting*, 1986.
- 3 Ross-Degnan D, Schwab L. The epidemiology of trachoma in Kenya. *Annual Conference of the National Council for International Health*, 1986.
- 4 Ross-Degnan D. Sampling techniques and data management in field surveys. Invited presentation to Workshop on Trachoma Epidemiology sponsored by the Edna McConnell Clark Foundation and the University of California. San Francisco, 1987.
- 5 Ross-Degnan D. Payment restrictions in medical effects on therapy, cost and equity. *Annual Meeting of the Drug Information Association*, 1987.
- 6 Soumerai SB, Ross-Degnan D, Avorn J, Gortmaker S. Intended and unintended outcomes of payment restrictions for ineffective pharmaceuticals. *American Public Health Association Annual Meeting Boston* 1988.
- 7 Soumerai SB, Ross-Degnan D, Avorn J, McLaughlin T. Medicaid drug payment limits as a cause of institutionalization and hospital use. *Association for Health Services Research* Washington D C 1990.
- 8 Ross-Degnan D, Soumerai SB, Fortess E, Gurwitz J. Examining product risk in context: changes in analgesic use following market entry and subsequent withdrawal of zomepirac sodium. *American Public Health Association Annual Meeting, Atlanta, GA, 1991*, *Asian Conference on Clinical Pharmacology and Therapeutics* Yogyakarta Indonesia, 1993.
- 9 Ross-Degnan D, Soumerai S, McLaughlin T, Fortess, E. Predictors of vulnerability to state drug payment restrictions. *American Public Health Association Annual Meeting, Washington, D C*, 1992.
- 10 Quick JD, Kibua TN, Collins D, Ross-Degnan D. Monitoring methods for user fees in Kenya: Assessing impact on patients, access, quality and revenue. *American Public Health Association Annual Meeting San Francisco* 1993.
- 11 Ross-Degnan D, Soumerai S, Goel P, Bates J, Makhulo J, Dondi N, Sutoto, Daryono A, Hogan R. Improving diarrhea treatment among pharmacists and drug sellers: Results of a field test in Kenya and Indonesia. *Asian Conference on Clinical Pharmacology and Therapeutics* Yogyakarta Indonesia 1993, and *American Public Health Association Annual Meeting, Washington D C*, 1994.
- 12 Ross-Degnan D and Laing RO. Quantitative methods for pharmacoepidemiology in developing countries. *Annual Meeting of the International Society for Pharmacoepidemiology, Stockholm, Sweden*, 1994.
- 13 Ross-Degnan D, Soumerai S, Long S, Hawley S. Medicaid formularies as a cost-containment tool: Do they really

- reduce costs? American Public Health Association Annual Meeting Washington D C 1994
- 14 Walser B, Ross-Degnan D, Soumerai S, Fortess E Did eliminating restrictive formularies from state Medicaid programs improve access to important medications? American Public Health Association Annual Meeting Washington D C , 1994
 - 15 Ross-Degnan D and Laing RO Indicators of appropriate antibiotic use The development of standard measures and methods 4th Western Pacific Congress of Chemotherapy and Infectious Disease, Manila Philippines 1994
 - 16 Ross-Degnan D Improving pharmaceutical use A framework and some intervention strategies Keynote address to Xth Annual Meeting of the Thailand Royal College of Physicians Pattaya Thailand, 1995