

**PHARMACEUTICAL MANAGEMENT  
COOPERATIVE AGREEMENT**

**RATIONAL PHARMACEUTICAL MANAGEMENT  
PROJECT**

**ANNUAL REPORT  
OCTOBER 1, 1995 - SEPTEMBER 30, 1996**

**WORK PLAN  
OCTOBER 1, 1996 - SEPTEMBER 30, 1997**

Rational Pharmaceutical Management Project  
Management Sciences for Health  
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## **I. INTRODUCTION**

The Rational Pharmaceutical Management (RPM) Project was developed by USAID as a component of the Health Financing and Sustainability Project. RPM provides a focus for work in the pharmaceutical sector to be carried out by the Office of Health of the Research and Development Bureau (R&D Health). R&D Health designed the RPM as two cooperative agreements to support institutions that work in close collaboration. The Pharmaceutical Management Cooperative Agreement was awarded to Management Sciences for Health (MSH) and the Pharmaceutical Information Cooperative Agreement was awarded to the United States Pharmacopeia (USP); this collaboration forms the Rational Pharmaceutical Management project.

The RPM cooperative agreement (CA) mandates that MSH and USP, using USAID core and field support funds, provide host countries with assistance by implementing long-term interventions in three technical areas:

1. establishing and automating drug registration systems;
2. rationalizing procurement and inventory management in the public sector; and
3. expanding drug information resources and promoting rational drug use.

To accomplish this work, the Pharmaceutical Management Cooperative Agreement offers:

- Indicator-based assessments of the pharmaceutical sector to be used for setting priorities and planning projects
- Policy analysis and dialogue to identify areas where policy change will enable sustainable reforms in management systems
- Long-term and short-term interventions to promote and support managerial reforms in the three priority technical areas
- Training workshops, in support of technical interventions
- Adaptation and installation of locally appropriate management information systems for drug registration, procurement and inventory management, drug use analysis, and drug information storage and retrieval
- Studies and operations research to examine the causes of problems in pharmaceutical management, as well as the impact of interventions aimed at changing inappropriate behavior
- Communications and social marketing programs aimed at policy makers, health care providers and consumers
- Dissemination of information on lessons learned and key issues arising from implementation of technical interventions

The Pharmaceutical Information Cooperative Agreement is responsible for:

- Expanding the USP Drug Information database to include commonly used non-U.S. products, including those found on the WHO Essential Drugs List;
- Adapting USP drug information formats for use in developing countries; and
- Assisting countries in using the USP database to produce locally appropriate drug information materials.

RPM started activities in September, 1992, although the MSH Drug Management Program (DMP) office in Washington opened in December, due to the need to relocate the Drug Management Program staff and files from Boston. This fourth annual report covers MSH's activities under the Pharmaceutical Management Cooperative Agreement in the period from October 1, 1995 to September 30, 1996, and the work plan outlines activities scheduled through September 30, 1997.

## II. SUMMARY OF PROGRESS

RPM progress to-date in **Nepal** is viewed positively by both MOH and USAID counterparts. RPM's financial and technical roles have grown substantially since work under the plan began in April 1994. The collaboration with JSI has been very successful, and has generated a certain amount of good publicity in both Washington and Kathmandu for both organizations.

To this point, the **Mozambique** country program has been a training program for capacitating staff at central, provincial and local levels to better perform their responsibilities in procurement, inventory control, stores management, distribution and promotion of rational drug use. The program includes a training of trainers component to ensure an ongoing local capacity. Training audiences include both logistics and health services delivery staff.

RPM has been in dialogue with the USAID **Zambia** Mission and the BASICS Project to clarify RPM's role in Zambia. In general, it is expected that RPM will assist with decentralization of pharmaceutical management activities that are expected to take place as part of the major health sector reform currently underway. RPM made a reconnaissance visit to Zambia and a draft work plan has been developed.

In **Ecuador**, RPM has been working on decentralizing pharmaceutical management at the *area* level, and has deferred proposed work on the restructuring of CEMEIM, the governmental procurement and distribution agency. Several workshops have been held in support of the decentralization efforts, and health professionals have been trained in both the new decentralized system and in conducting indicator-based assessments of the pharmaceutical system.

In **Russia**, pharmaceutical sector assessments were conducted in Novgorod and Pskov *oblasts* and a policy options workshop was held to determine work plans for these regions. RPM increased its work in formulary development activities, writing a manual and holding workshops to promote the concepts, and more than forty hospitals have formed formulary committees. The project continued its work in drug use evaluation and community pharmacy management training.

RPM's work in **Poland** began with a series of meetings with USAID, the Data for Decision Making project, and Jagiellonian University. RPM developed a work plan based on these meetings and feedback, but USAID subsequently decided not to include pharmaceutical activities in the Strengthening Local Government in Health Project.

RPM's work in the **Eastern Caribbean** has been reduced to supporting INVEC-2 installations in the region, after a final follow up trip in February to five islands. Modems and remote access software were installed in each island to allow better remote support from the US.

### III. TECHNICAL ACTIVITIES

#### A. Country Programs

##### *Progress*

##### *Nepal*

The Logistics System Improvement Plan, which is the umbrella document for RPM's work in Nepal, was revised in March. It assumes continued close collaboration with the bilateral Child Survival and Family Planning Services Project and the central Family Planning Logistics Management Project (both managed by JSI) and continued work in procurement, drug information and rational use activities.

An adaptable database, containing USP-developed monographs for most of the products on the Nepal Essential Drugs List, has been installed on the Department of Drug Administration (DDA) computer. USP staff are adapting this database, adding information on local brand names, dosage forms, strengths, and other information as appropriate, to create a Nepal-specific USP Drug Information (USP DI) database. This process will be ongoing, with new drug monographs being added and adapted as appropriate.

In August 1995, with technical support from RPM, INRUD Nepal completed operations research on interventions for improving drug prescribing and dispensing. RPM has now prepared a proposal for demonstrating and evaluating, in two districts, a replicable strategy of training, supervision and monitoring interventions for promoting rational drug use. RPM has submitted a proposal for covering the local implementation costs of this activity to the German assistance agency GTZ. GTZ has indicated that, in principle, they are willing to fund the local costs of this activity if the DDA will collaborate with GTZ to integrate the work into GTZ's primary health care (PHC) framework. Before this demonstration can take place, however, the standard treatment guidelines must be field tested, revised, and published.

The Drug Information Network of Nepal continues to operate at four sites, including His Majesty's Government (HMG) Department of Drug Administration, Tribhuvan University Institute of Medicine, the Nepal Chemists and Druggists Association, and the Resource Center for Primary Health Care. This mix of organizations includes, respectively, the government drug regulatory authority, the leading medical education center, the professional representative association for retail drug sellers and an NGO that specializes in community-based public health activities.

The formal opening of the Network was held in September, and plans for action-oriented studies on how to expand the programs' reach have been approved. Each site has a project, but funds for these studies have not yet been allocated because subcontracts have not been signed between RPM's USP CA and the Network sites. USP is making an effort to move faster on the subcontracts.

RPM sponsored a study tour to Malaysia for five Nepali health professionals. The participants included one staff member from each of the Drug Information Network of Nepal sites and the head of the Department of Drug Administration.

Standard treatment guidelines for primary health care workers have been drafted by a committee of experts led by DDA and assisted by RPM consultant Budiono Santoso. The document is now being translated into Nepali. A contract is being signed with Tribhuvan University for them to field test the guidelines and revise them accordingly.

Data have been collected, organized and analyzed concerning procurements of drugs and contraceptives from HMG budgetary sources and major donors. The concrete output is the *Nepal Pharmaceutical Supply Directory*, which may be regarded as a prototype management information system (MIS) for tracking commodity and financial inputs. The directory presents product and cost data on all flows of drugs entering the MOH system by either purchase or donation. Only limited progress has been made in establishing this data collection into a routine MIS activity, but a tentative agreement has been reached with John Snow, Inc., that RPM will work with them to carry on this work in the context of the Logistics Management Information System (LMIS).

A study design was completed and data collected for a major study of drug financing options for a large scale community-based drug sales program managed by UNICEF. This activity was financed by the German Assistance Agency KFW and the Japan-based Nippon Foundation. UNICEF is responsible for coordinating this ambitious activity, but has been unable to produce credible design work on its own. USAID/Nepal has provided resources through the RPM project to carry out this work at UNICEF's request. RPM completed the comprehensive and well-received *Nepal Cost-Sharing in Pharmaceutical Distribution* report in May, and has disseminated it.

The local NGO Resource Centre for Primary Health Care (RECPHEC) has completed and released three issues of the *Bhalakusari* newsletter under support from RPM. The topics of these issues were "What should happen when a patient sees a care provider;" "Antidiarrheals, anti-cough preparations, and tonics;" "Injection is not a magic medicine." RECPHEC published 7000 copies of each issue of the *Bhalakusari* newsletter. Three additional issues and an evaluation of the publication will be funded by RPM.

At the Mission's request, RPM prepared a "five year vision" for drug management in Nepal. Using the existing country work plan as a point of departure, this document lays out an optimal program of activities that could be carried out, if sufficient funds were available.

### ***Bangladesh***

In September, at the request of USAID Bangladesh, RPM Director Jim Bates traveled to that country to advise the Mission on options for implementing drug cost recovery activities among NGOs. Following site visits and a meeting with several leading NGOs, RPM prepared a brief report outlining issues to be kept in mind for designing and implementing drug cost recovery activities on a large coverage basis.

*Mozambique*

In October 1995, a regional course on "Managing Drug Supply and Promoting Rational Drug Use" was organized by RPM for the four provinces of the Central Region (Zambezia, Tete, Manica, and Sofala), in Villa Manica, located in the Manica province, 18km from the Zimbabwe border. Funding for the participants (22) was provided by the UNICEF Essential Drug Program. Most of the lectures were conducted by the MOH senior staff who had been trained as trainers during the first course. Their presentations were well received. This course represented a concrete start towards achieving the important objective of building, within the MOH, a core group of local experts that should be able to organize and conduct such courses on a regular basis in the very near future.

The training materials for this course are in the final stages of completion and will be tested once more in the last regional course, scheduled for October 1996. WHO has expressed interest in sponsoring a Luzophone Africa course based on these materials, and has solicited a proposal from RPM on how to conduct the course.

While in Chimoio, RPM staff met with representatives of several agencies (UNICEF, Finida, and Save the Children), to explore the possibilities of installing INVEC-2 to computerize Regional Medical Stores activities. It was decided that once the MOH gives its approval, the Chimoio regional store could be used as a pilot site. Finida has been identified as a potential source to fund this activity (including the translation of the software and the manual).

During this visit, discussions were held with the USAID mission and the URC-managed Primary Health Care project to identify a suitable mechanism to provide more funds for RPM technical interventions in the areas of rational drug use, needs assessment, computerization and policy reforms.

RPM has given the mission a work plan for FY 96/97 that calls for an additional \$272,000 for continuing and expanding the scope of training activities, plus supporting such new activities as drug needs quantification, drug utilization review, and computerization of storage facilities. Drug quantification activities were scheduled, but were delayed because of changes in procurement practices that have resulted from recent Mozambican health care system reforms.

A Portuguese translation of approximately 75% of the USP database has been converted into adaptable electronic format, for use in Mozambican adaptation efforts. The USP is responsible for this activity.

*Zambia*

For fiscal year 1996/97, USAID Zambia provided RPM's MSH CA with a field support allocation of \$100,000. USAID has designated the BASICS Project as the lead CA for purposes of managing its major bilateral Zambia Child Health Project. In general, it is anticipated that RPM's country program will be oriented to support the Child Health Project. Accordingly, before the field support allocation was put into place, BASICS funded a country visit by an RPM staff member to propose an appropriate plan of activities.

This initial RPM visit took place in June, to coincide with high level meetings on the forthcoming National Drug Policy. One output was a proposed work plan, but the visit also afforded an opportunity for RPM to assist the Ministry with arranging an emergency procurement of drugs and medical supplies, valued at \$3,800,000, and funded by a consortium of European donors. During this visit, RPM was also able to arrange for the World Bank to fund the costs of RPM technical assistance to analyze bids submitted for a \$6,000,000 loan-financed drug procurement.

In September, RPM attended a CAs' meeting in Zambia. In the course of the meeting, both USAID and BASICS requested that RPM modify its work plan, so that it was less oriented toward assistance at the central level, and more oriented towards assistance at the peripheral level. RPM has submitted a revised plan.

### *Ecuador*

The decision has been made to defer proposed work on the restructuring of CEMEIM, the governmental procurement and distribution agency, and to focus all RPM efforts on the decentralization of pharmaceutical management at the *area* level. Work is being carried out in close collaboration with the World Bank-funded FASBASE Project, with a focus on that project's eight pilot *areas*.

In October, an RPM team visited Ecuador, and in a series of positive discussions, developed a work plan of activities to carry out at the *area* level over the next six months. The basic sequence includes: training staff to assess conditions in the pilot *areas*; developing a model for covering such operations as programming, procurement, inventory control, stores management and cost recovery; training staff to operate the model; and work on developing a strategy for promoting rational drug use. The installation of INVEC-2 figures prominently in plans for developing the management model. This sequence of activities has already begun with the presentation of the "Pharmaceutical Management Indicators Workshop" for MOH and FASBASE staff.

During the October visit, RPM became aware that there are two recently opened private medical schools that might be candidates for rescuing the drug information center plans, which have been on hold. Certainly, this would be sensitive from the point of view of the Central University, so this possibility must be explored with caution.

A workshop was held to capacitate staff from the eight *areas* to conduct indicator-based pharmaceutical sector assessments, using the RPM rapid assessment method. These staff completed assessments in eight *areas*. Subsequently, trainers were trained to disseminate this assessment method beyond the FASBASE pilot *areas*.

Based on the findings of the *area* assessments, plus experience from other countries, a model for decentralized pharmaceutical management was proposed. This will include automation of procurement and inventory control activities using INVEC-2, and community participation in drug cost-recovery operations.

Elvira Beracochea traveled to Ecuador to conduct a workshop in which participants analyzed and interpreted the data they collected in the rapid evaluation of the pharmaceutical sector in pilot *areas*. Elvira then worked with MSH staff members David Nelson and Pablo Paez to analyze the data and prepare the findings report. The report was completed in January 1996.

Elvira Beracochea traveled to Ecuador in February to meet with local counterparts and conduct a workshop to revise the draft operations manual for the new decentralized drug management system. On the same trip, she conducted a training of trainers in using the Spanish version of the manual, *Rapid Pharmaceutical Management Assessment: An Indicator-Based Approach*. Eight health care providers attended the training. The training of trainers was based on the experience of the September 1995 Santa Cruz, Bolivia, workshop where an international audience was trained in using the indicators. The goal of subsequent trainings is to introduce the indicator-based technique to local level people in order for them to analyze and solve their own problems. One product of the February Ecuador workshop was a manual to be used in future indicators trainings.

USAID/Ecuador has indicated that it will continue field support funding for the MSH cooperative agreement in FY 1996 at an anticipated level of \$275,000. Upon their request, RPM/MSH also submitted a proposal to the FASBASE project for approximately \$260,000 to fund a complementary program of activities, the most prominent of which concern promotion of rational drug use. Despite an initial show of interest, FASBASE decided not to fund the proposal.

The RPM team has developed a decentralized drug management manual and an accompanying training of trainers manual. USAID allocated money for RPM to expand its decentralized drug management training activities to hospitals. This work began in the Hospital Eugenio Espejo (HEE), the main referral hospital in the country. A five-day workshop for 45 health professionals from ten districts was held there in September to test and refine this manual. The workshop trained staff to anticipate their drug needs, making use of more efficient procedures and of the Spanish version of RPM's *Manual for the Development and Maintenance of Hospital Drug Formularies*. RPM hopes that this training will be replicated in other hospitals, coordinated and conducted by staff from the Hospital Eugenio Espejo.

RPM has been unable to hold a planned workshop for USAID-supported NGOs to seek ways to integrate them into the implementation of the decentralized management model because the NGOs have been too busy to participate. In addition, work on the design of monitoring and supervisory systems for decentralized drug management has been deferred because the mission requested that RPM wait until after the August elections in Ecuador. RPM is still planning to do this work.

Pablo Paez is modifying the Spanish version of INVEC-2 to adapt it to the decentralized drug management system. He experienced difficulties adapting the software because the MOH and FASBASE were unable to provide him with a counterpart.

### *Peru*

USAID Peru provided RPM's MSH CA with a field support allocation of \$49,000. RPM staff made a reconnaissance visit in July 1996, and has subsequently communicated with the mission concerning how best to use this resource. It was RPM's initial impression that USAID and its in-country CAs wanted RPM to assist with workshops or other technology transfer activities in the general area of "pharmaceutical sector assessment." To-date, however, RPM has been unable to clarify what is being requested.

### *Eastern Caribbean*

Due to general funding constraints, this country program has been placed in a "phase out mode." Accordingly, travel by RPM staff has been cut back and the budget for FY 96/97, which is core funded, has been reduced from \$48,000 to \$24,000.

On a final visit by RPM staff, an upgrade of the INVEC-2 program was installed at five different country sites: St. Lucia, St. Vincent, Grenada, Dominica, and Antigua. Installation was accompanied by on the job training and trouble shooting, as well as cleaning databases, and providing more advanced training in Report Writer. During site visits for the upgrade, remote access software was installed that allows RPM to provide program maintenance and support by modem. This mechanism has been successfully tested, and in consequence no further country visits are planned. The E.C. experience in remote access maintenance will be useful in other country programs. RPM has trained ECDS staff such that future INVEC-2 installations and training will be done by ECDS. RPM also met with ECDS staff about their plans to use ECPRO-2 for the next tender cycle. Steve Reed, the main ECPRO-2 programmer, also attended the meeting.

RPM has continued to provide support by phone, fax, and modem to INVEC-2 installations in the E.C. Staff from St. Vincent, Grenada, and St. Lucia have contacted RPM for questions and trouble-shooting in the past year. All problems have been successfully resolved.

### *Poland*

RPM received an OYB transfer of \$100,000 for work in Poland during the last funding cycle. The plan had been to make a reconnaissance visit in November 1995, but this was put on hold at the USAID representative's request. Since then, the Data for Decision Making (DDM) project has developed a work plan for a program of intervention tests centered on the theme of decentralization of health services. DDM is conducting this program in cooperation with Jagiellonian University in Krakow. DDM has incorporated a pharmaceutical management activity to be carried out by RPM in the work plan, using the OYB funds mentioned above.

RPM made a reconnaissance visit in April, and participated in a major workshop for presenting the DDM/JU program in May. At that workshop, RPM staff and counterparts proposed interventions that could be tested in pharmaceutical management. Following feedback, a work plan for the RPM Poland country program was finalized. Based on the types of suggestions that were being made, it is apparent that follow on funding will be required.

RPM had anticipated that the Poland program would be a substantial one for RPM, but it has not developed as planned. From May until August it appeared that RPM would receive a significant increment of funds in Poland, for a program of interventions to improve product selection, procurement, and drug use in health facilities of three local government jurisdictions. In August, USAID Poland decided not to go forward with this plan.

RPM has proposed two options for spending the remaining balance of the original funding allocation and completing work in Poland. Both of the options focus on assisting staff at a hospital in Krakow with improved product selection and drug use.

## Russia

Seven Ryazan and Novgorod officials received advanced training in formulary development, orientation to drug utilization review (DUR), use of drug information databases, and desk-top publishing, during a U.S. study tour in Tucson, Arizona and Washington D.C. in October. In November, RPM conducted a three-week clinical pharmacology course in Novgorod for over 140 Novgorod and Pskov physicians. The course resulted in quicker understanding of the concept of drug formularies and the need for restricted drug lists than had been the case with RPM's work in Ryazan.

RPM trained 11 Novgorod and Pskov specialists in conducting indicator-based rapid pharmaceutical sector assessments, and jointly conducted an abbreviated pharmaceutical sector assessment in the two *oblasts* in November and December. The assessments were abbreviated to focus directly on the local situation, since national issues were addressed in a previous Ryazan assessment.

The RPM assessment team consisted of MSH CA staff members Tony Savelli, Thomas Moore, Harald Schwarz, and Andrei Zagorski, plus Kirill Burimski of USP. They modified their plans and spent one week in each city collecting data; the local pharmacists who had been trained to do this work did not collect the data. Team members individually drafted sections of the assessment reports. Olya Duzey reviewed data collected from Ryazan oblast in May 1994 and February 1995 in order to assist Tom in analyzing the data collected from the Novgorod and Pskov assessment. The team also evaluated the feasibility of adapting MSH's PASS software for the drug usage evaluation process in Novgorod and Pskov *oblasts*.

During January and February, Tom Moore completed the Novgorod and Pskov draft assessment reports. In February he visited both *oblasts* to review the reports with *oblast* officials for content and correctness, and to make arrangements for the March 1996 "Policy Options Workshop." The final assessment reports were translated into Russian and given to workshop participants. The workshop, attended by 64 people, was held the week of March 18, 1996. Separate work plans for the six RPM technical areas were prepared for both Novgorod and Pskov *oblasts*, including activity, person responsible, and date to be accomplished.

Tony Savelli delivered a lecture on "Cost Effective Drug Selection" to 200 medical students at the Ryazan Medical University. He also worked with the Moscow office staff to continue to establish office procedures and policies. MSH is considering registering the Moscow office as a business entity, and to this end Tony met with representatives of other non-profits in Moscow concerning the registration process.

Tony Savelli, Andrei Zagorski, and Nikita Afanasiev traveled to Novosibirsk to meet with staff of the Abt Associates *ZdravReform* project and a group of representatives from four *oblasts* in Siberia where the project is working. Tony Savelli discussed RPM technical areas with these representatives and Abt. The group agreed that the planned "Formulary Development Workshop" in February will include participants from these four *oblasts*. Further collaboration will be discussed.

Harald Schwarz worked with the staff of the Ryazan Oblast Clinical Hospital to begin drug use review activities. A visit was also made to the Deputy Governor, who is the Pharmacy Head. RPM has written a DUR manual, which was translated into Russian and used in the first DUR workshop in Russia. The manual provides stepwise guidelines for establishing DUR programs in Russian hospitals.

RPM conducted DUR evaluations at the *oblast* hospital in Novgorod and at the Veterans' Polyclinic in Pskov in June, using the MSH-developed PASS, prescription analysis software. The activities served as an introduction to DUR for local personnel and provided data for use during the DUR workshop conducted in September. The first DUR workshop in Russia was conducted in Ryazan in September 1996 for 50 physicians and pharmacists from Ryazan, Novgorod and Pskov hospitals.

Olya Duzey held a pharmacy management course in March, involving 12 people who had previously worked with her on pharmaceutical management. The course was designed as a "training of trainers," which taught participants how to conduct their own pharmacy management courses. The process is helping to refine how RPM will shape basic and advanced level pharmacy courses in roll-out *oblasts*. A pharmacy management manual will also be a product of the courses.

MSH consultant Terry Green worked with the Ryazan Oblast Clinical Hospital on procurement issues. However, work on most procurement issues has been postponed until the budget situation is clarified. Ryazan *oblast* officials did form the *oblast* tender committee in 1995 as the result of their exposure to the concept during a previous U.S. study tour, and conducted a mini-tender for human insulin in Ryazan *oblast*, resulting in cost savings of approximately US\$585,526.

Plans are being made to install INVEC-2 in Russia. RPM has identified the computer firm MIX to provide local support in the installation. Andrei Kolyesov, Technical Director of MIX, a Ryazan-based computer firm, traveled to Washington in February to work with Jean-Pierre Sallet on the Russian adaptation of INVEC-2. MIX completed the adaptation in Russia, and has begun to train Ryazan Pharmacia staff on use of the software. MIX has an accounting package RPM may consider adding to INVEC-2. The Moscow office staff has translated the INVEC-2 manual into Russian. Subsequent installations of INVEC-2 will be done through a subcontract with MIX.

Tony Savelli, Andrei Zagorski, Harald Schwarz, and Alexander Bykov completed work on the text of the *Manual for the Development and Maintenance of Hospital Drug Formularies*. The manual was produced in both English and Russian. Tony, Harald, and consultant Ed Armstrong conducted a two-week "Formulary Development Course" that was held in Moscow for specialists from Ryazan, Novgorod, and Pskov. Some participants from the *ZdravReform* Project also attended. A "Formulary Development Workshop" was conducted by RPM staff in Pskov *oblast* in May with approximately 45 participants in attendance from Novgorod, Pskov and Ryazan hospitals.

The Ryazan Oblast Public Health Committee has formed a Formulary Department with responsibility for overseeing the implementation of drug formularies in all *oblast* hospitals. Forty-seven hospitals have established formularies in Novgorod, Pskov, and Ryazan to-date.

Olya Duzey continued to review the ACCRUE Level II Pharmacy Management Curriculum to determine if the materials could be adapted for use in developing a Russian-language management training manual. Olya developed the schedule for the "Intensive Pharmacy Management Course," held in Ryazan on March 15-20. Consultant Harsha Desai worked with Olya to develop and present materials on Strengths, Weaknesses, Opportunities, Threats (SWOT) analysis and development of scenarios at the course.

Olya's presentation consisted of sessions on financial analysis, including a case study, sources of finance in Russia, computer needs, and group purchasing and other group activities in Ryazan. Twelve private sector community pharmacies in Ryazan that participated in developing business plans during the RPM "Advanced Pharmacy Management Workshop" performed significantly better than other pharmacies during annual accreditation inspections.

Olya also contacted vendors of currently available pharmacy benefits management (PBM) software and reviewed their written materials to evaluate their applicability to the Russian market. She maintained contact with Ryazan Health Department officials regarding the developing difficulties in budgetary allocation for pharmaceuticals.

Tony Savelli visited WHO offices in Geneva and Copenhagen to discuss RPM/WHO collaboration. WHO was invited to participate in the February "Formulary Development Workshop," but were unable to attend. Natela Menabde gave a presentation on WHO activities in the NIS during an RPM session at the April "Man and Drugs" Congress in Moscow.

A community pharmacy management study tour conducted by RPM staff in Michigan was attended by 12 physicians and pharmacists from Moscow, Novgorod, Pskov, and Ryazan. Participants were able to see first-hand how state-run programs and associations affect the practice of community pharmacy.

### *Reproductive Health*

In September 1995, USAID Global HPSR brought together an *ad hoc* working group composed of staff from HPSR itself, RPM and the MotherCare project to examine issues related to pharmaceutical management for reproductive health. RPM's role has been to advise approaches and methods for estimating drug needs and costs on both global and country levels.

The Reproductive Health Working Group has met a number of times in the course of the year, and there has been an evolution in the documents produced. MotherCare has helped to define the scope of problems under review by providing a list of 34 reproductive health conditions, together with lists of drugs and medical supplies required for treating each. RPM has developed a spread sheet that displays all required pharmaceutical and medical supply products and calculates the cost of treating one episode of each condition. RPM has also provided a document that describes the steps to be carried out for making useful cost estimates.

### *Plan*

Detailed work plans for most of these country programs are available from RPM, but a summary of each appears below.

#### *Nepal*

- Continue work on, and possibly complete, first edition of the Nepal Drug Information Database. Disseminate this product to appropriate consumers, possibly by sale.

- Design, lay out, field test and publish in English and Nepali the revised version of the *Standard Drug Treatment Schedule*.
- Begin two-district demonstration of rational drug use strategy. The first phase of work will focus on development of required materials. GTZ has expressed willingness in principle to fund the local costs of this activity; but whether this comes about will depend on how active DDA is in pursuing this activity.
- Develop the work already completed on drug procurements from HMG and donor sources into a routine MIS activity. Integrate this into the Logistics MIS.
- Continue operation of the Drug Information Network; in particular, support projects to be carried out by each Network site, which aim to increase demand and expand coverage.

### ***Bangladesh***

- RPM will follow up with the USAID mission in Dhaka about the possibility for RPM work in Bangladesh.

### ***Mozambique***

- The third, and final, two-week regional course on "Managing Drug Supply and Promoting Rational Drug Use" will be held in October 1996. Thirty participants are expected, which will bring the total number of Mozambican health professionals trained in RPM courses to 104. RPM expects that all of the training in this course will be done by Mozambican trainers, with RPM staff there to direct and facilitate the course. The project anticipates expanding its training activities with inventory control and management courses for the provincial level. RPM also plans to develop and test a drug use evaluation protocol at the provincial level in early 1997.
- Following the course, RPM will prepare an assessment of results of the courses that have taken place. This will be largely based on evaluation of participant projects that were identified during the training.
- RPM plans to follow up on projects done by the participants of these courses to assess the impact of the training.
- RPM will finalize training materials in Portuguese and turn them over to MOH, as well as seek opportunities to make further use of them in Luzophone Africa. A final set of the Portuguese language materials from the courses will be given to the MOH by January 1997, to be used at MOH discretion.
- USP staff will work with local officials to adapt the Portuguese version of the USP DI database to suit local conditions, creating a Mozambique-specific USP DI database. Using this material, USP is expected to assist in establishing a drug information center.
- RPM plans to conduct additional provincial-level trainings on drug use evaluation (DUE) and review to support work in promoting rational drug use. To assist in institutionalizing DUE at the provincial level, RPM will conduct follow up activities to review progress made by the course participants.

- RPM plans to conduct a country-wide needs assessment for pharmaceuticals and/or medical supplies for the MOH.
- RPM plans to assess management information systems at the central level of the pharmaceutical department to assist them in monitoring distribution in Mozambique.

### *Zambia*

For FY 1996, RPM received field support funding of \$100,000 for activities to carry out in Zambia. This money was not put in place until August, but prior to that, in June, the BASICS Project funded the cost of a country visit by an RPM staff member to: (a) participate in meetings concerning the development of the new National Drug Policy; (b) identify ways that RPM could support BASICS in the implementation of the Zambia Child Health Project; and (c) develop an RPM work plan.

An important feature of the situation in Zambia is that the Ministry of Health is in the midst of an ambitious and fast paced reform effort. One consequence of this is that it can be difficult to formulate work plans, as proposals put on paper one month are easily over taken by events the next month.

RPM has proposed a menu of six activities that could be carried out in Zambia. Some of them concern improving management information systems at the central medical store, and others concern assisting with the decentralization of drug management operations to the district level. As the reporting period ends, it is not certain what will be the list of activities that RPM will carry out, but the tendencies appear to favor decentralization as the main stream. RPM will continue dialogue with MOH, BASICS, USAID and other donors, and finalize a country work plan as soon as this is feasible.

### *Ecuador*

Elections in August resulted in a change of government. In consequence , RPM will revise its work plan to better respond to the new government's priorities. Based on discussions with the new MOH authorities, RPM's activities will include the following:

- RPM will assist in the development of a provincial supervision and monitoring system for the new decentralized pharmaceutical system based on the guidelines approved by the MOH.
- RPM has prepared a 1997 work plan for assisting in: collaboration with MOH and other donor agencies to extend the decentralized pharmaceutical management model; strengthening the provincial capacity to support the expansion of the new drug management system; designing and supporting interventions for promoting rational use of drugs by both care providers and patients at Hospital Eugenio Espejo (HEE); and developing an efficient hospital drug management system for institutional pharmacies in HEE and selected other hospitals.
- RPM will explore assistance opportunities for drug management information systems in the newly-created Informatics Department in the MOH, especially for the remote computer support system designed by David Nelson.

- RPM will continue looking into efficient mechanisms to collaborate with other USAID-funded projects that might benefit from improved pharmaceutical management.

### *Peru*

Elvira Beracochea traveled to Lima from June 29 to July 3 to identify opportunities for RPM to work in Peru using field support funds allocated by the Mission. She held meetings with USAID HPN staff, and staff at MOH, Project 2000, SHIP-North (MAXSALUD), SHIP-South, and REPROSALUD. Elvira prepared a draft work plan and budget for the Mission to consider. The work plan includes an options analysis workshop with participants from Project 2000, PRO-VIDA, DIGEMID, and regional health offices to interpret the findings of a recent study in the project regions. It also includes a cost-effective prescribing and drug management workshop with participants from Strengthening Health Institutions Project (SHIP) North and South staff, and Regional MOH health center staff to improve the use of drugs at health center level.

The Mission has not yet responded to the draft work plan. RPM will be visiting Peru in November to discuss future work and finalize a work plan. Further details will be available after that visit.

### *Eastern Caribbean*

- Continue providing remote access (modem) support to INVEC-2 installations.

### *Poland*

- Once the option for RPM work in Poland is identified, agreements with Jagiellonian University will be negotiated, if needed. RPM work will commence and be completed within approximately one month.

### *Russia*

- Complete writing of the manual on principles of community pharmacy management by January.
- Conduct a high-level technical meeting in October for the physicians of forty-seven Ryazan, Novgorod and Pskov hospitals that have established formularies to-date. RPM expects to enhance formulary development in these hospitals and assist in using drug utilization review (DUR) techniques learned in the first DUR workshop in Russia, held in September.
- Prepare written guidelines for pharmaceutical procurement procedures with an emphasis on pooled procurement.
- Conduct a pharmaceutical procurement workshop in Pskov in June.
- Conduct a second DUR workshop in Russia in Novgorod or Pskov in order to teach DUR principles, and how to establish a DUR program. The workshop will be used to disseminate guidelines for stepwise implementation of a DUR program in Russian hospitals.

- Collaborate with USP in conducting a “Russian Drug Information Workshop” in February.
- Collaborate with AIHA and conduct a combination formulary development/DUR workshop in March.
- Present RPM working models at the annual Russian Man and Drugs Congress in April.
- Collaborate with WHO in conducting a “Rational Drug Prescribing Workshop” in May.
- Conduct technical visits to hospitals in Novgorod, Pskov and Ryazan for assistance in DUR program activities.
- Conduct technical visits to hospitals in Novgorod, Pskov and Ryazan for assistance in formulary development activities.

### Central Asia

- RPM technical work is planned in collaboration with BASICS, and the results of the work will be used by BASICS personnel in establishing a comprehensive educational program. With timeliness and cost effectiveness in mind, RPM and BASICS have agreed to combine assessment questionnaires so that data collection for all purposes can be done at one time. RPM’s participation will be funded by an OYB transfer of \$110,000.
- In October, RPM will prepare drug management questionnaires designed to obtain information from primary health care prescribers and families in the treatment of children’s diarrheal disease (CDD) and acute respiratory infection (ARI) for children 0-5 years old. The drug management topics to be covered are: drug availability in health clinics and hospitals, prescribing patterns in health clinics and hospitals, and types of drugs sold in retail settings. The RPM questionnaires will be incorporated into the BASICS Facility Survey forms, which will be used by BASICS personnel to conduct a survey in the following locations: Zhambul *oblast*, Kazakhstan; Osh *oblast*, Kyrgystan; and Ferghana *oblast*, Uzbekistan.
- Following the data collection phase of the BASICS Facility Survey in November, RPM will extract the following data from the survey forms and analyze the information using MSH’s Prescription Analysis Software System (PASS):
  - Cost of drug treatment for CDD and ARI by age group
  - Identify the most expensive drugs prescribed
  - Number and type of diagnoses per patient visit by age group
  - Percentage of drugs prescribed by generic name and by injection
  - Quantification of drugs prescribed by therapeutic class
  - Number of drugs prescribed per patient visit
  - Total percentage male and female patients
  - Reported symptoms versus drug prescribed
  - Frequency and duration of drugs prescribed
  - Drug prescribing pattern by type of facility

- In December RPM will publish a report describing both drug and non-drug treatment patterns of *feldschers* (similar to a physician's assistant) and physicians for treatment of CDD and ARI in children 0-5 years old in FAP (*feldscher* station), SVA (ambulatory unit), and SUB (rural hospital) health facilities of the three oblasts. The RPM report will be incorporated into the BASICS final report.
- BASICS personnel will use reported information in planning educational intervention activities for primary health care prescribers and consumers.
- RPM will also conduct simulated purchase surveys in retail pharmacies in one or more local areas, depending on available resources. The results will provide information on diarrhoea and ARI treatment practices of drug sellers, and will be given to BASICS for incorporation into their IEC activities.
- During the project, RPM will develop tools for collecting and reporting data on drug availability and prescribing patterns. The tools will be designed for use manually or by computer depending on technology available in the MOH and oblast health organizations. Assessment tools, specific indicators for monitoring treatment patterns, and training programs developed during the course of this project will be made available to MOH personnel for follow-on use.

#### ***Technical Support for HPSR and other USAID Central Offices***

- It is expected that the Reproductive Health (RH) Working Group will review and finalize RPM's proposal for assessing drug availability, and that RPM will move on to making an estimate of global RH commodity requirements, based on published data. If authorized, RPM will also carry out one or more country studies.
- In collaboration with BASICS and PAHO, RPM will contribute to the LAC Regional Integrated Management of Childhood Illnesses (IMCI) Initiative. Most likely, this contribution will consist of the development, testing and dissemination of a drug management module to be integrated into the overall regional approach to IMCI.
- It may be noted that there is similarity and overlap between the work that RPM is doing with the LAC IMCI Initiative and the Central Asia Infectious Disease Project. One important commonality is that both activities involve providing specialized input on drug management into a broader child survival activity being managed by BASICS. Another is that both activities would benefit from use of selected indicators presented in RPM's *Rapid Pharmaceutical Management Assessment: An Indicator-Based Approach* manual, particularly with respect to product costs and availability. Still another is that both provide an opportunity to use RPM's prescription analysis software (PASS) to provide morbidity-specific analysis of drug use patterns and their costs. Finally, both activities provide an opportunity to gather and analyze data on retail drug sellers treatment practices. In sum, RPM will use the LAC IMCI and the CAIDP activities as a platform to create a tool for assessing drug management in support of IMCI, and present this for use by BASICS and other concerned organizations.
- RPM will hold discussions with the AIDS/HIV Division, and it is hoped that this will lead to a role for RPM in support of USAID programs for reducing STD/HIV transmission.

- In the last year, using RPM Project funds, USAID awarded two grants to WHO. One went to the Action Programme on Essential Drugs and the other went to the Europe Bureau. It is expected that RPM will collaborate with these two WHO agencies as they carry out the work funded by these grants. RPM will also assist HPSR by monitoring and reporting on the progress of each grant. More detailed information on the status of the grants has been requested from the RPM Cognizant Technical Officer (CTO), but was not received in time to include in this report.
- RPM has been asked by the Africa Bureau to play a role in assessing both needs and available resources for USAID to support improved drug management in Africa. RPM will participate in discussions, as requested, and it is hoped that this will lead to definition of specific activities and funding.

## **B. Tools Development and Information Dissemination**

### ***Progress***

***INRUD News:*** The October edition of the *INRUD News* was distributed internationally to 2,500 health professionals. The practice of placing RPM project information inserts in the *INRUD News* was continued. The October edition contained a flyer describing RPM publications and software and providing information on how to order copies of desired items. The *INRUD News* February 1996 issue was printed and distributed to over 2,600 health professionals, and included an *RPM Project Update* focusing on the Mozambique country program. The September 1996 edition included an *RPM Project Update* detailing RPM's work in Nepal, and the official opening of the Drug Information Network of Nepal.

***Conference Presentations:*** DMP Director Jim Rankin and Denis Broun of the World Bank presented at the National Drug Policy Conference in Australia on October 9th through 11th. Jim's presentation focused primarily on involving the private sector in public sector activities. He also presented a poster on rapid assessment methodology based on the *Rapid Pharmaceutical Management Assessment: An Indicator-Based Approach* manual. INRUD Coordinator David Lee spoke on INRUD activities. The INRUD Annual Meeting, also in New Castle, preceded the conference on October 5th and 6th.

RPM-Russia staff participated in the Man and Drugs Congress, held in Moscow in April. They gave presentations on the RPM-Russia project's work in Ryazan, Pskov, and Novgorod, and on "Methods of Rational Management of the Pharmaceutical Sector."

Elvira Beracochea traveled to Mexico City to attend a three-day conference on drug management. She gave a presentation on "Involving the Private Sector in the Public Pharmaceutical System" for health care professionals and architects who specialize in health care systems.

A presentation on RPM tools was made at the APHA conference.

Harald Schwarz, Tony Savelli and Ed Armstrong wrote an article on "Introducing Formulary Selection in Russia" that was published in the *American Journal of Health-System Pharmacists* in February.

In April, Jim Rankin attended a four-day meeting at WHO in Geneva to discuss evolving roles of the public and private pharmaceutical sectors, and to consider ways to maximize collaboration between public and private sector entities. Jim chaired the sessions on public/private options in procurement and distribution. It is hoped that a consensus will emerge on how best to investigate options for change, and to implement more effective public/private cooperation in drug management.

At the Ryazan Medical University, a lecture on "Cost Effective Drug Selection," developed jointly by RPM staff and university faculty, has been added to the curriculum for medical students.

**Software:** The manual for PASS, or Prescription Analysis Software System, was completed and the product distributed for beta testing.

Upgrading and support of INVEC-2 were continued. Dissemination of demonstration copies continued.

RPM has designed a tool in the Russian language for performing financial analyses of retail pharmacies. INVEC-2, the MSH inventory management software program, has been adapted for use in Russia. The program is being translated into Russian for use at Ryazan Pharmacia and other project sites. Russian/English language formulary development computer software has been developed, and is in use at the Ryazan Oblast Clinical Hospital. The software has been used to build a database of information on drugs commonly used in Russia.

**Information Dissemination:** More than 20 information centers affiliated with USAID projects, other donors and NGOs were contacted and offered packages containing standard assortments of RPM materials. So far, packages have been distributed to three centers.

Julie McFadyen sent out information packets on the RPM-Russia project to more than ten individuals and aid organizations worldwide. In addition to information Russia-specific documents, she included copies of the *International Drug Price Indicator Guide*, *Rapid Pharmaceutical Management Assessment: An Indicator-Based Approach*, and the *Manual for the Development and Maintenance of Hospital Drug Formularies*.

Russian language training materials have been developed and utilized in the following technical areas: indicator based assessments; drug procurement; community pharmacy management; formulary development; and drug utilization review. These materials have been disseminated widely in Russia.

## **Plan**

- Intensify efforts to place RPM packages in established information centers.
- Continue inserting RPM *Project Updates* in the *INRUD News*; possibly identify other newsletters that could serve the same purpose.
- Produce manual for the ECPRO-2 drug tendering and procurement software. As the software itself has undergone extensive testing, it will be possible to distribute this item as a finished product.

- Upgrade existing drug needs estimation software to produce the ESTIMED program, prepare manual, and distribute the product for beta testing.
- Modify PASS, RPM's prescription analysis software, so that it provides a defined set of graphic reports on drug use patterns for IMCI.
- Hold a half-day presentation here in Washington to familiarize USAID and USAID project staff with RPM tools and other resources.

#### IV. COST-SHARING ACTIVITIES

##### A. Progress

**Zimbabwe:** On his return from RPM activities in Mozambique in November 1995, Jean-Pierre Sallet stopped in Harare to meet with Erik Larsen of the Zimbabwe Essential Drugs Action Programme (ZEDAP) and to provide INVEC-2 program modifications and follow-up support.

After traveling to Mozambique for RPM in April 1996, Jean-Pierre Sallet stopped for a four-day visit in Zimbabwe. He met with officials of the Zimbabwe Essential Drugs Action Programme (ZEDAP) and provided INVEC-2 follow-up assistance. ZEDAP has used INVEC-2 successfully for over a year and may fund additional installation follow-up visits.

**International Dispensary Association (IDA):** In November 1995, Jean-Pierre Sallet visited IDA in Amsterdam. While there, he toured their production facility. IDA and MSH collaborated on a procurement and inventory management course, which began 30 September in Amsterdam. Jean-Pierre Sallet was the course director for MSH.

**Paraguay:** Under a University Research Corporation project, Pablo Paez traveled to Paraguay for the completion of the INVEC-2 installation at the Ministry of Health. While there, he provided follow-up training on using INVEC-2, helped establish data standards, and reviewed the implementation of the software into the standard operating systems.

**INRUD:** David Lee visited Mbarara, Uganda, to participate in the third and final regional workshop conducted by the Uganda INRUD core group to disseminate the results of its "Prescription Audit and Feedback Study of Treatment of Malaria."

In April the INRUD Uganda group coordinated its first "Promoting Rational Drug Use (PRDU) Course" in Kampala, Uganda. The course was managed locally by Willy Anokbonggo (INRUD Uganda Coordinator) and his staff in Kampala. The course was well-attended, with 46 participants from 15 countries of Africa and Europe. David Lee and David Ofori-Adjei (INRUD Ghana Coordinator) acted as course trainers and were joined by several WHO-DAP resource persons.

A two-day INRUD African Coordinators meeting was convened at Kampala with the five African Coordinators. The purpose was to discuss how rational drug use activities were proceeding, the next joint SOCEPTA-INRUD meeting, and future training activities. INRUD may support individuals to attend a November 1996 problem-based course in South Africa. In addition, it was agreed that the next African PRDU course would take place in Tanzania, possible in July 1997.

From Uganda, David Lee traveled to Dhaka, Bangladesh, for an INRUD Asian Coordinators meeting with the five Asian Coordinators. The group discussed INRUD coordination, regionalization, collaboration with other agencies, and preparations for the next Asian PRDU course in Bangladesh in November 1996.

From Dhaka, David Lee, Dennis Ross-Degnan (Harvard Drug Policy Group) and three of the Asian Coordinators traveled to Bangkok for a one-day planning meeting to discuss preparations for the INRUD-WHO-sponsored International Conference on Improving the Use of Medicines scheduled for April 1-4, 1997.

David Lee also went to London to meet with Andrew Herxheimer, President of the International Society of Drug Bulletins (ISDB) regarding potential joint INRUD-ISDB activities, such as assessments of the impact of drug bulletins and trainings.

David Lee and members of INRUD country core and support groups attended the VI<sup>th</sup> World Conference on Clinical Pharmacology and Therapeutics in Buenos Aires, Argentina, in August. Three INRUD colleagues participated in the symposium on the "Challenge of Rational Drug Use," chaired by Prof. Molly Thomas from India. David was an invited speaker at the symposium on "Education Towards Rational Prescribing of Drugs," chaired by Prof. Folke Sjöqvist of the Karolinska Institute, Sweden. The symposium addressed various strategies aimed at improving drug selection and prescribing at undergraduate and practitioner levels. David and Albin Chaves from Costa Rica also conducted a one-hour session on the role and perspectives of clinical pharmacology in Latin America, as part of a Pan American Health Organization-sponsored mini-course on clinical pharmacology.

An abbreviated five-day "Promoting Rational Drug Use Course" was held in Mexico City, September 16-21, co-sponsored by INRUD and the International Network for Clinical Epidemiology (INCLLEN). David Lee, Maria Miralles, INRUD colleague and RPM consultant Budiono Santoso participated as trainers, along with Geoffrey Anderson of INCLLEN. The course was attended by 28 health professionals from five countries, including Brazil, Colombia, Chile, Mexico, and Venezuela. Twelve professionals are linked to LATINCLLEN as current or future members of the network, eight participants work in the Department of Pharmacology at the Clinical Pharmacology Unit of the National Autonomous University of Mexico (UNAM); and eight participants are linked to the Mexican Social Security Institute, a public sector institution with health service delivery and the largest single buyer of pharmaceuticals in Mexico.

The *INRUD News* was published in September and 3000 copies were distributed worldwide. Tom Moore, Olga Solovieva, and Jean-Pierre Sallet published their research brief entitled "Field Testing of PASS Software in Russia." The Prescription Analysis Software System (PASS) was produced by RPM, and is designed to produce standard reports on prescribing patterns and can be used to assess compliance with standard treatment guidelines and formularies. RPM was also represented in a second research brief prepared by Mohan Joshi, Bimal Shrestha, Pradeep Shrestha, Chandra Shrestha, David Housley, and Keith Johnson entitled "Drug Information Network of Nepal: An Innovative Approach to the Provision of Information." The brief details the development of the Drug Information Network of Nepal (DINoN).

*Nicaragua:* In January David Lee traveled to Nicaragua on a two-week visit to review findings and discuss a work plan for strengthening the Centro de Insumos para la Salud.

*Mexico:* The Mexican Social Security Institute (Instituto Mexicano del Seguro Social-IMSS) and the Center for Studies on the Strategic Development for Social Security (Centro de Estudios para el Desarrollo Estratégico de la Seguridad Social-CEDESS) awarded a contract to MSH to evaluate its pharmaceutical distribution system. The objective of the study was to critically evaluate alternative models for reforming the pharmaceutical supply system of the IMSS. At least five alternatives are being considered, each involving varying degrees of participation by the private sector and decentralization. A technical team including MSH staff members David Lee, Maria Miralles, Marc Mitchell, Chris Olson, and Pablo Páez, and consultants Letizia Amadini, Thomas Kergall, and Raúl Molina Salazar visited Mexico to collect data.

The team spent two weeks in March collecting data on pharmaceutical procurement, distribution, and consumption on the national level, as well as on the regional and local levels in two regions of the country, the northwest and the west. In order to assess local conditions, surveys were carried out at more than 80 hospitals, health facilities and private pharmacies. Site visits to regional and state level warehouses assessed actual conditions and storage capabilities. In addition, interviews were held with representatives of national and international pharmaceutical manufacturers, distributors and industry associations. Preliminary findings were discussed with CEDESS counterparts prior to the team's departure from Mexico. In May, Jim Rankin and Jean-Pierre Sallet joined David Lee and Maria Miralles for a second visit to Mexico to discuss the draft report and options with CEDESS staff.

David Lee assisted CEDESS in presenting the study findings and recommendations to the Director of Social Security, who immediately issued instructions to CEDESS to prepare a work plan for implementing the recommendations. IMSS is also interested in having someone look at medical supplies selection and use. Potential follow up work may also include MSH assistance in forming a Pharmacy and Therapeutics committee and creating a drug component to their MIS system.

*PAHO Drug Information Systems Course:* Beginning in May, DMP hosted a twelve-week course in "Drug Information Systems" for five Indian pharmacists and doctors. 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. Students received lectures at the Food and Drug Administration, the United States Pharmacopeia, and by DMP staff in the topics of drug management and information. They prepared project proposals to obtain funding and implement improved drug information systems in India. The project topics were: how to establish a drug information center in the province of Jaipur, how to set up an adverse drug reaction reporting system in a teaching hospital, how to disseminate new drug information, and how to deliver drug information services in a teaching hospital and in one medical faculty. The course ran through early August.

**South Africa:** Maria Miralles traveled to South Africa for BASICS to field-test new WHO training materials on "Drug Supply Management for First Level Health Facilities." Maria co-directed the course with Helene Moller (MEDUNSA/Medicos Pharmacy Project). The training took place in the Northwestern province at the St. Peter's Training Center, Hammanskral campus of the University of Pretoria. The training included one week of training of trainers (TOT), a three-day workshop for health care workers, and two weeks of in-service follow-up training. Four trainers were trained and sixteen participants attended the workshop. Based on this experience, recommendations were made for further material development and revisions. The materials will be ready for publication by January, 1997.

MSH Paul Alexander Memorial Fellow recipient Maria Lin acted as an observer of the field test and assisted the WHO consultant.

**Pharmaceutical Sector Management Course:** MSH, in collaboration with the Office of International Programs at Howard University, conducted a work-study course on pharmaceutical sector management for eight Russian physicians and pharmacists in July. The two-week course was funded by USAID through the Academy for Educational Development NET project. The participants, who live in four different regions of Russia, are upper-level managers of various public and private organizations involved in health care and the provision of pharmaceuticals. The purpose of the course was to provide first-hand knowledge of U.S. management methods in the areas of insurance medicine, community pharmacy, pharmaceutical warehousing systems, and pharmacy legislation and regulation. By the end of the two weeks the participants had visited the Maryland Pharmacists' Association, Maryland Board of Pharmacy, a Kaiser Permanente HMO clinic and warehouse, a CVS chain pharmacy, and an independent Leesburg, VA, pharmacy. MSH conducted a session on the "Strategic Problem Solving Process" near the end of the course, during which an existing Russian health care problem was used as an example. As a closing exercise, participants were required to prepare action plans that lead to the resolution of one problem in their *oblasts* for each of the following categories: insurance medicine, community pharmacy, wholesale pharmacy, and pharmaceutical legislation.

**Zambia:** In August, Julie McFadyen spent two weeks in Zambia on a consultancy with the Government of Zambia. She was there to assist in the adjudication of a \$6 million tender, done with World Bank funds. Julie worked with Zambian Department of Pharmaceutical Services staff to evaluate the bid documents for compliance with tender terms, and to train the staff in using INVEC-2 for tender adjudication. By the end of the consultancy, preliminary awards had been made for all items for which valid bids were received. This work was prompted by RPM's program in Zambia.

## **B. Plan**

Although the RPM project would like to plan its cost-sharing activities in advance, it is difficult to do so because the work is usually done on short notice, at the request of various donors.

## V. ADMINISTRATIVE ACTIVITIES

### A. Progress

In Moscow, Rachel Kondon worked with Office Manager Olga Aksonova on implementing MSH field office procedures, including the use of field accounting software. She also completed a draft of the *Moscow Office Policy and Procedure Manual*.

MSH Benefits Manager Anne Turtle met with DMP staff to conduct the annual benefits review.

RPM and DMP staff with supervisory responsibilities conducted Performance Planning and Review sessions for all staff. This exercise takes place twice annually in accordance with MSH personnel procedures.

Jennifer Jones and Sarah Schuler attended Quattro Pro training courses. Both Jennifer and Sarah use Quattro Pro on a regular basis to monitor RPM and INRUD budgets.

Jennifer and Queta Clark conducted an accounting and budget monitoring review session for all DMP administrative staff. Jennifer and Queta have worked to maintain a program-level accounting systems which ensures proper accounting standards are maintained and USAID regulations are always followed.

Jennifer and RPM Russia backstopper Rachel Kondon traveled to Boston in April to meet with MSH accounting staff. They reviewed the Moscow office field office accounting system and tried to address the many issues of managing an office in Russia. In May, Jennifer and Rachel attended the PVO Financial Manager's workshop on "Personnel and Benefits Issues and Field Office Administration." Representatives from a number of other organizations with projects in Russia attended the workshop and were eager to discuss Russia-specific issues and experiences.

Jean-Pierre Sallet represented RPM and DMP on the MSH selection committee to choose a new corporate travel agency. Of the seven agencies that responded to MSH's RFP, *I-Travel* of Arlington, VA, was selected based on their experience in international travel and with USAID travel regulations.

In July RPM interviewed candidates for the Senior Program Assistant position. Rachel Fefer, who started work on August 26, will support the RPM Nepal, Ecuador, Zambia, and Central Asia programs.

RPM also recruited for its new Information Technology Specialist position. Crispin Vincent was hired for this position and will maintain the office hardware, software, network, and Internet connection.

MSH is preparing for its 1996 Worldwide Meeting scheduled for November 22 and 23. At the same time, MSH will celebrate its 25th anniversary. RPM will be well represented at the meeting and plans to coordinate a display of accomplishments at the "Sharing Results" session.

### B. Plan

In the next year, RPM anticipates undergoing a formal evaluation of the project. We will be consolidating activities and files in preparation for the end of the project in September 1997, although we hope to receive a project extension. Staff will be ensuring that the project's files are up-to-date and complete, and will also be deciding what should be done about the expiration of the lease on the present office space.

## VI. FINANCIAL REPORTS

### *RPM*

**Funding:** To date, USAID has obligated \$7,937,311 to MSH for activities conducted under the RPM cooperative agreement. Of this amount, \$3,220,000 has been obligated as core funds, \$615,000 in Nepal field support, \$498,000 in Ecuador field support, \$550,000 in Mozambique field support and OYB funds, \$100,000 in Poland field support, \$49,000 in Peru field support, \$100,000 in Zambia field support, and \$110,000 in OYB transfer funds to the Central Asia Infectious Diseases Program. The total cumulative obligation also includes \$650,000 in NIS OYB transfer, \$1,940,732 in NIS add-on funds, and \$104,579 Mozambique add-on funds. Please see the attached report "Fiscal Data" which shows cumulative obligations and expenditures against individual obligations through September, 1996; all field support costs are fully loaded (please see Field Support section below). Also attached is the table entitled "Spending by Activity," which shows cumulative spending by country and technical activity for the life of the project. These costs are not loaded with ACF.

**Field Support:** Since Fiscal Year 1995, RPM has been operating under the USAID Office of Population Health and Nutrition decentralized system of field support (FS). RPM has managed project finances within this new system of monitoring where direct or attributable costs are fully loaded by the allocable cost factor (ACF). The ACF is the proportion of allocable costs to all attributable costs. This ratio is added to the attributable costs for each activity to determine the fully loaded cost of that activity. The RPM ACF for FY96 was 36.65; this is comparable to other projects funded by USAID. The table entitled "RPM Expenditures by Country and Funding Source" shows fully loaded costs by activity for the period October 1995 to September 1996.

**Cost Sharing:** The RPM cooperative agreement requires that MSH cost share an amount equal to 12.69% of the total funding over the life of the RPM Project. MSH and the DMP's network of collaborative working relationships with key organizations has enabled MSH to provide assistance within the technical scope of RPM with non-U.S. Government funding. As seen in the attached graph entitled "Cost Sharing - Cumulative Expenditures through September 1996," current cost sharing funding reached a level of nearly \$2.9 million, equivalent to 36.65% of RPM activities.

### *RPM-Russia*

In FY95, MSH was awarded the RPM-Russia cooperative agreement. USAID has obligated the full agreement amount of \$2,374,264 to MSH. Through September 1996, MSH has spent \$1,308,081 in technical activities. Please see the table attached entitled "Spending by Activity."

| Rational Pharmaceutical Management Project |              |                 |                          |                    |                       | January 11, 1997                |                                  |
|--|--------------|-----------------|--------------------------|--------------------|-----------------------|---------------------------------|----------------------------------|
| Fiscal Data                                |              |                 |                          |                    |                       |                                 |                                  |
| MSH Contract Number                        | Funding Type | Obligation Date | Projected Funding Period | Funding Amount     | Cumulative Obligation | Spent To-Date<br>(thru 9/30/96) | Remaining Funds<br>(funds-spent) |
| <b>RPM (HRN-5974-A-00-2059-00)</b>         |              |                 |                          |                    |                       |                                 |                                  |
| <b>Core</b>                                |              |                 |                          |                    |                       |                                 |                                  |
| A3100                                      | CORE         | 25 SEP 92       | 25 SEP 93                | \$1,000,000        | \$1,000,000           | \$1,000,000                     | \$0                              |
| A3100                                      | CORE         | 14 JUL 93       | 31 MAY 94                | \$100,000          | \$1,100,000           | \$100,000                       | \$0                              |
| A3100                                      | CORE         | 14 JUL 93       | 31 MAY 94                | \$900,000          | \$2,000,000           | \$900,000                       | \$0                              |
| A3100                                      | CORE         | 16 MAY 94       |                          | \$720,000          | \$2,720,000           | \$489,425                       | \$230,575                        |
| A3100                                      | CORE         | 31 MAR 95       | 31 DEC 95                | \$200,000          | \$2,920,000           |                                 | \$200,000                        |
| A3100                                      | CORE         | 5 SEP 96        |                          | \$300,000          | \$3,220,000           |                                 | \$300,000                        |
|  |              |                 | <b>subtotal</b>          | <b>\$3,220,000</b> |                       | <b>\$2,489,425</b>              | <b>\$730,575</b>                 |
| <b>Field Support</b>                       |              |                 |                          |                    |                       |                                 |                                  |
| A3100 (Nepal)                              | FS           | 31 MAR 95       | 31 DEC 95                | \$380,000          | \$3,600,000           | \$380,000                       | \$0                              |
| A3100 (Ecuador)                            | FS           | 31 MAR 95       | 31 DEC 95                | \$200,000          | \$3,800,000           | \$200,000                       | \$0                              |
| A3100 (Mozam)                              | FS/OYB       | 26 JUN 95       |                          | \$90,000           | \$3,890,000           | \$90,000                        | \$0                              |
| A3100 (Mozam)                              | FS           | 26 JUN 95       |                          | \$200,000          | \$4,090,000           | \$169,939                       | \$30,061                         |
| A3100 (Poland)                             | FS           | 22 AUG 95       |                          | \$100,000          | \$4,190,000           | \$50,812                        | \$49,188                         |
| A3100 (Nepal)                              | FS           | 5 SEP 96        |                          | \$235,000          | \$4,425,000           | \$149,219                       | \$85,781                         |
| A3100 (Ecuador)                            | FS           | 5 SEP 96        |                          | \$298,000          | \$4,723,000           | \$131,887                       | \$166,113                        |
| A3100 (Mozam)                              | OYB          | 5 SEP 96        |                          | \$230,000          | \$4,953,000           | \$0                             | \$230,000                        |
| A3100 (Peru)                               | FS           | 5 SEP 96        |                          | \$49,000           | \$5,002,000           | \$0                             | \$49,000                         |
| A3100 (Zambia)                             | FS           | 5 SEP 96        |                          | \$100,000          | \$5,102,000           | \$0                             | \$100,000                        |
| A3100 (Mozam)                              | OYB          | 18 SEP 96       |                          | \$30,000           | \$5,132,000           | \$0                             | \$30,000                         |
| A3100(CAIDP)                               | OYB          | 18 SEP 96       |                          | \$110,000          | \$5,242,000           | \$0                             | \$110,000                        |
|  |              |                 | <b>subtotal</b>          | <b>\$2,022,000</b> |                       | <b>\$1,171,857</b>              | <b>\$850,143</b>                 |
|  |              |                 | <b>total A3100</b>       | <b>\$5,242,000</b> |                       | <b>\$3,661,281</b>              | <b>\$1,580,719</b>               |
| A3102 (NIS + Russia)                       | ADD-ON       | 16 AUG 93       | 16 DEC 95                | \$1,940,732        | \$7,182,732           | \$1,126,547                     | \$814,185                        |
| A3103 (Mozam)                              | ADD-ON       | 30 SEP 93       | 31 AUG 96                | \$104,579          | \$7,287,311           | \$105,039                       | (\$460)                          |
| A3104 (NIS + Russia)                       | OYB          | 25 SEP 94       | 31 MAR 95                | \$650,000          | \$7,937,311           | \$61,338                        | \$588,662                        |
|  |              |                 | <b>total</b>             | <b>\$7,937,311</b> |                       | <b>\$4,954,206</b>              | <b>\$2,983,105</b>               |
| <b>RPM Russia (HRN-0004-A-00-5002-00)</b>  |              |                 |                          |                    |                       |                                 |                                  |
| A3200                                      | CORE         | 6 JAN 95        | 31 DEC 97                | \$2,374,264        | \$2,374,264           | \$1,531,588                     | \$842,676                        |

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| <b>Rational Pharmaceutical Management Project</b> |                                   |                                 |
|---|-----------------------------------|---------------------------------|
| <b>Spending by Activity</b>                       |                                   | <b>Cummulative Expenditures</b> |
| <b>(CA # HRN-5974-A-00-2059-00)</b>               |                                   | <b>through September 1996</b>   |
| <b>Core Funds</b>                                 |                                   |                                 |
| <b>Non-Country Specific Technical Assistance</b>  |                                   |                                 |
|   | Program Mgmt/Technical Oversight  | 1,495,127.93                    |
|   | Task Force                        | 49,187.89                       |
|   | IEC/Social Marketing              | 57,554.65                       |
|   | Operations Research               | 52,726.03                       |
|   | Op Research in Repro Health       | 546.50                          |
|   | Software Development              | 109,111.69                      |
| <b>Russia</b>                                     | Development                       | 16,189.85                       |
| <b>Ukraine</b>                                    | Assessment                        | 82,110.50                       |
| <b>Poland</b>                                     | Assessment                        | 512.59                          |
| <b>Nepal</b>                                      | Assessment                        | 49,732.24                       |
|   | Technical & Admin Support         | 16,756.86                       |
|   | Registration                      | 20,476.04                       |
|   | Procurement/Logistics             | 146,984.52                      |
|   | Drug Info/Rational Use            | 101,724.53                      |
| <b>Bolivia</b>                                    | Assessment                        | 4,482.90                        |
| <b>Ecuador</b>                                    | Assessment                        | 28,034.85                       |
|   | IEC/Social Marketing              | 1,281.32                        |
|   | Technical & Admin Support         | 26,893.35                       |
|   | Procurement/Logistics             | 136,906.31                      |
|   | Drug Info/Rational Use            | 43,060.48                       |
| <b>El Salvador</b>                                | Assessment                        | 71,112.60                       |
| <b>Peru</b>                                       | Technical & Admin Support         | 5,719.52                        |
| <b>Eastern Caribbean</b>                          | Assessment                        | 47,412.27                       |
|   | Procurement/Logistics             | 87,904.39                       |
| <b>Latin America</b>                              | IEC/Social Marketing              | 67,553.90                       |
| <b>Ghana</b>                                      | Assessment                        | 99,376.47                       |
| <b>Mozambique</b>                                 | Training/Workshops                | 98,440.39                       |
| <b>TOTAL CORE</b>                                 |                                   | <b>2,916,920.57</b>             |
| <b>NIS Add-on Funds</b>                           |                                   |                                 |
| <b>Russia</b>                                     | Assessment                        | 297,744.28                      |
|   | Technical & Admin Support         | 31,317.86                       |
|   | Procurement/Logistics             | 18,292.20                       |
|   | Formulary Development             | 17,399.66                       |
|   | Finance/Economic Sustainability   | 36,196.33                       |
|   | Training/Workshops                | 85,558.79                       |
| <b>NIS</b>  | Technical and Admin Management    | 191,972.52                      |
| <b>TOTAL NIS ADD-ON</b>                           |                                   | <b>678,481.64</b>               |
| <b>Mozambique Add-on Funds</b>                    |                                   |                                 |
| <b>Mozambique</b>                                 | Assessment                        | 80,423.91                       |
|   | Technical & Admin Support         | 22,629.93                       |
| <b>TOTAL MOZAMBIQUE ADD-ON</b>                    |                                   | <b>103,053.84</b>               |
| <b>NIS Tin Cup Funds</b>                          |                                   |                                 |
| <b>NIS Region-wide</b>                            | Interactive Training              | 1,779.41                        |
| <b>Kazakhstan</b>                                 | Procurement/Logistics             | 4,110.92                        |
|   | Pharmaceutical Systems Management | 12,108.20                       |
| <b>Russia</b>                                     | Russia training development       | 7,771.47                        |
| <b>Poland</b>                                     | TA Development                    | 4,982.36                        |
| <b>TOTAL TIN CUP</b>                              |                                   | <b>30,752.36</b>                |
| <b>Total RPM Expenditures to Date</b>             |                                   | <b>3,729,208.41</b>             |

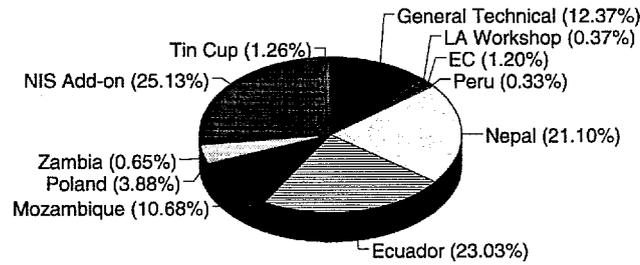
26

**RPM Expenses by Country and Funding Source**  
**FY 96 Expenditures (Oct 95-Sep 96)**

| Activity          | Expenditures Loaded with ACF |
|-------------------|------------------------------|
| General Technical | 162,083                      |
| LA Workshop       | 4,825                        |
| EC                | 15,742                       |
| Peru              | 4,383                        |
| Nepal             | 276,426                      |
| Ecuador           | 301,747                      |
| Mozambique        | 139,867                      |
| Poland            | 50,812                       |
| Zambia            | 8,519                        |
| NIS Add-on        | 329,197                      |
| Tin Cup           | 16,492                       |
| <b>Total</b>      | <b>1,310,094</b>             |

**FY96 Expenditures**

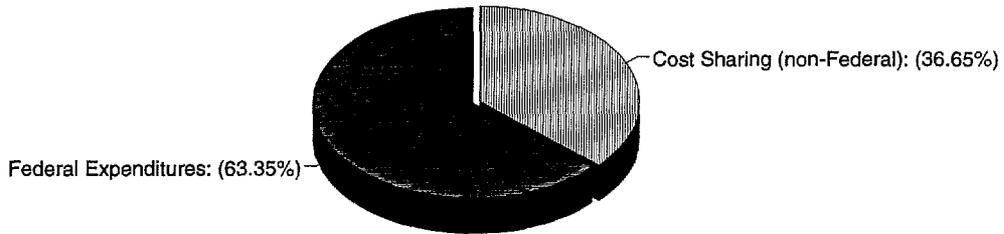
All Costs are Loaded with ACF



**Rational Pharmaceutical Management Project**  
**Cost Sharing**  
Cumulative Expenditures through September 1996

|                                 |             |
|---------------------------------|-------------|
| Total Expenditures thru Sep 96: | \$7,829,591 |
| Cost Sharing (non-Federal):     | \$2,869,313 |
| Federal Expenditures:           | \$4,960,278 |
| Cost Sharing as % of Total:     | 36.65%      |

**Cost Sharing**  
as Percent of Total Funds - thru 1996



**Rational Pharmaceutical Management Project****Spending by Activity****(CA # HRN-0004-A-00-5002-00)****Cumulative Expenditures  
through September 1996****Core Funds****Russia**

|   |            |
|---|------------|
| Russia IEC/social marketing               | 122,882.33 |
| Russia tech & admin support               | 562,747.37 |
| Russia organizational development         | 32,346.93  |
| Russia Drug Information/Rational Use      | 7,626.25   |
| Russia pharm. Finance/econ sustainability | 251.99     |
| Russia Training/workshops                 | 179,176.33 |
| Russia Operations Research                | 128.00     |

**TOTAL** 905,159.20**Ryazan**

|   |            |
|---|------------|
| Ryazan tech & admin support               | 36,703.71  |
| Ryazan procurement/logistics              | 49,771.26  |
| Ryazan formulary development              | 74,251.07  |
| Ryazan pharm. finance/econ sustainability | 109,829.90 |

**TOTAL** 270,555.94**Novgorod**

|                            |           |
|----------------------------|-----------|
| Novgorod assessment        | 49,363.52 |
| Novgorod general technical | 39,378.67 |

**TOTAL** 88742.19**Pskov**

|                         |           |
|-------------------------|-----------|
| Pskov assessment        | 28,200.24 |
| Pskov general technical | 15,423.02 |

**TOTAL** 43,623.26

1,308,080.59

**TOTAL RUSSIA CA**

## VII. INVENTORY AND PROPERTY

In adherence to the terms of the RPM cooperative agreement, RPM developed a system ensuring control and maintenance of all property purchased under this agreement. Each durable goods item is labeled with its inventory number and the words "Property of U.S. Government." It is also listed in a database, which includes the following information about each item: identification number assigned by MSH, price paid, location, item name, brand name, description, date received, serial number, and model number. RPM maintains detailed records of all property repairs. In the period covered by this report, RPM had fifteen items repaired, upgraded, or exchanged:

| Inventory No. | Name            | Maintenance Notes   |
|---------------|-----------------|---|
| 93            | Binder          | This was replaced by item number 220 when it broke and was exchanged in December, 1995.   |
| 127           | Computer        | This computer was stolen from the RPM office the night of 24 January 1996. A report was filed with the police, but computer was not recovered.  |
| 128           | Computer        | Sent to Austin for repair on 4/12/96. They replaced the LCD back panel and battery, and added "textured" ball to trackball. We received it back on 4/19/96. No charge--covered under warranty.  |
| 129           | Computer        | Sent to Austin for repair on 1/27/95. They replaced hard drive, trackball and modem. No charge--covered under warranty. We received it back on 2/6/95.<br><br>This computer was stolen from the RPM office the night of 24 January 1996. A report was filed with the police, but the item was not recovered.                              |
| 130           | Computer        | Sent to Austin for repair on 5/18/95. They swapped system board to current revision, and replaced the fan and plastic case. No charge--covered under extended warranty. We received it back on 10/24/95.  |
| 131           | Computer        | Sent to Austin for repair on 10/27/95 because it was running very slowly and the hard drive cover kept falling off. The 33mHz setting in CMOS wasn't sticking, either. They corrected software problems, updated BIOS and drivers and replaced the HDD door. We received it back on 11/14/95. No charge--covered under extended warranty. |
| 132           | Docking Station | This docking station was stolen from the RPM office the night of 24 January 1996. A report was filed with the police, but the item was not recovered.   |
| 136           | Docking Station | This docking station was stolen from the RPM office the night of 24 January 1996. A report was filed with the police, but the item was not recovered.   |
| 188           | Printer         | Sent to FutureNet on 2/26/96 because it would not print. Printer was under warranty, so it was exchanged for a new one, inventory number 237.   |

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|     |                 |   |
|-----|-----------------|---|
| 194 | Port Replicator | This port replicator was stolen from the RPM office the night of 24 January 1996. A report was filed with the police, but the item was not recovered. |
| 197 | Computer        | This computer was stolen from the RPM office the night of 24 January 1996. A report was filed with the police, but the computer was not recovered.    |
| 201 | Computer        | Returned external floppy drive to Telecomp for repair on 1/24/96. Exchanged and returned on 1/31/96.  |
| 217 | Computer        | This computer was stolen from the RPM office the night of 24 January 1996. A report was filed with the police, but the item was not recovered.        |
| 220 | Binder          | This replaced item number 93, which broke and was exchanged in December 1995.   |
| 237 | Printer         | Replaced item number 188.   |

The inventory of durable goods purchased with RPM funds follows.

INVENTORY OF MSH/DMP/RPM EQUIPMENT AND DURABLE GOODS FOR OCTOBER 1995 TO SEPTEMBER 1996

| INVEN. NUM | NAME           | BRAND NAME      | DESCRIPTION                         | DATE RECEIV. | SERIAL NUM.  | MODEL NUM.  | PRICE   | LOCATION    | CONTRACT |
|------------|----------------|-----------------|-------------------------------------|--------------|--------------|-------------|---------|-------------|----------|
| 220        | BINDER         | GBC             | ELECTRIC GBC BINDER                 | 12/05/95     | GD0B053      | IM3000      | 197.51  | ROSSLYN     | 3200     |
| 228        | CHAIR          | AARON           | GREY, ARMS                          | 02/23/96     |              |             | 127.86  | ROSSLYN     | 3200     |
| 216        | COMPUTER       | TOSHIBA         | 475,16MB,500MB,2XCDROM,ACTIVE,MODEM | 11/01/95     | 09516109     | T2150CDT    | 4030.00 | MOSCOW-AZ   | 3200     |
| 217        | COMPUTER       | TOSHIBA         | 475,16MB,500MB,2XCDROM,ACTIVE,MODEM | 11/01/95     | 09516124     | T2150CDT    | 4030.00 | ROSSLYN     | 3200     |
| 241        | COMPUTER       | TOSHIBA         | NOTEBOOK,T700,P120,1.2,16,CDROM,ACT | 03/11/96     | 01626087     | PA1214U     | 6477.96 | ROSSLYN-JPS | 3100     |
| 242        | COMPUTER       | TOSHIBA         | NOTEBOOK,T400CDT,P90,810,16,ACTIVE  | 03/11/96     | 01621283     | PA1207U     | 4643.98 | ROSSLYN-TS  | 3200     |
| 243        | COMPUTER       | TOSHIBA         | NOTEBOOK, T400CDT,P90,810,16,ACTIVE | 03/11/96     | 01621199     | PA1207U     | 4643.98 | ROSSLYN-HS  | 3200     |
| 244        | COMPUTER       | QUANTEX         | P150, 16, 2GB, 6X CDROM, 17"        | 03/18/96     | 7001390912   | QP5/150 SM1 | 2868.00 | ROSSLYN-JM  | 3100     |
| 229        | COMPUTER HUTCH | AARON           | WOOD VENEER, 12 X 44 1/4 X 34       | 02/23/96     |              |             | 159.21  | ROSSLYN     | 3200     |
| 230        | COMPUTER HUTCH | AARON           | WOOD VENEER, 12 X 44 1/4 X 34       | 02/23/96     |              |             | 159.21  | ROSSLYN     | 3200     |
| 231        | COMPUTER HUTCH | AARON           | WOOD VENEER, 12 X 44 1/4 X 34       | 02/23/96     |              |             | 159.21  | ROSSLYN     | 3200     |
| 232        | COMPUTER HUTCH | AARON           | WOOD VENEER, 12 X 44 1/4 X 34       | 02/23/96     |              |             | 159.21  | ROSSLYN     | 3200     |
| 213        | CREDENZA       | AARON           | WOOD VENEER, 20X60, 4 DRAWERS       | 07/26/96     |              |             | 375.16  | ROSSLYN     | 3200     |
| 226        | DESK CHAIR     | AARON           | GREY TWEED, WHEELS, ARMS, SWIVEL    | 02/23/96     |              |             | 169.66  | ROSSLYN     | 3200     |
| 227        | DESK CHAIR     | AARON           | GREY TWEED, WHEELS, ARMS, SWIVEL    | 02/23/96     |              |             | 169.66  | ROSSLYN     | 3200     |
| 238        | DESK STATION   | TOSHIBA         | DESK STATION V FOR TECRA T700       | 03/11/96     | 12521766     | PA2712U     | 782.71  | ROSSLYN-JPS | 3100     |
| 224        | FILE CABINET   | AARON           | 2 DRAWERS, PARCHMENT-COLOR, LOCK    | 02/23/96     |              |             | 295.06  | ROSSLYN     | 3200     |
| 225        | FILE CABINET   | AARON           | 2 DRAWERS, PARCHMENT-COLOR, LOCK    | 02/23/96     |              |             | 295.06  | ROSSLYN     | 3200     |
| 219        | MODEM          | HAYES           | ACCURA FAX 14.4/14.4                | 10/19/95     | A0005300P544 | 5300AM      | 135.84  | ROSSLYN-JR  | 3200     |
| 233        | PHONE          | NORTHERN TELECO | UNITY 7                             | 02/05/96     | I5047        | 512632SB    | 164.56  | ROSSLYN     | 3200     |
| 234        | PHONE          | NORTHERN TELECO | UNITY 7                             | 02/05/96     | I5048        | 51263255    | 164.56  | ROSSLYN     | 3200     |
| 235        | PHONE          | NORTHERN TELECO | UNITY 7                             | 02/20/96     | AR341395     | NT4L10AD35  | 164.56  | ROSSLYN     | 3200     |
| 236        | PHONE          | NORTHERN TELECO | 2-LINE UNITY                        | 02/20/96     | AR392157     | NT4L15AH35  | 128.00  | ROSSLYN     | 3100     |
| 245        | PHONE          | NORTHERN TELECO | UNITY 7                             | 05/14/96     | AR391846     | NT4L10AH35  | 185.00  | ROSSLYN     | 3200     |
| 246        | PHONE          | NORTHERN TELECO | UNITY 7                             | 09/15/96     | 004362003    | 5126325B    | 165.07  | ROSSLYN     | 3200     |
| 221        | PORT REPLICAT. | TOSHIBA         | FOR T400CDT                         | 01/05/96     | 11562225     | PA2711U     | 314.00  | ROSSLYN     | 3200     |
| 239        | PORT REPLICATO | TOSHIBA         | FOR T400                            | 03/11/96     | 12524398     | PA2711U     | 391.88  | ROSSLYN-HS  | 3200     |
| 240        | PORT REPLICATO | TOSHIBA         | FOR T400                            | 03/11/96     | 12523376     | PA2711U     | 391.88  | ROSSLYN-TS  | 3200     |
| 218        | PORT REPLICATR | TOSHIBA         | T2100 SERIES                        | 11/01/95     | 08525400     | PA2708U     | 235.00  | MOSCOW-AZ   | 3200     |
| 204        | PRINTER        | CANON           | BJ-30                               | 10/20/95     | XBK21035     | K10152      | 274.00  | ROSSLYN     | 3100     |
| 237        | PRINTER        | CANON           | BJ-30                               | 03/05/96     | XBRO8232     | K10152      | 281.00  | ROSSLYN     | 3200     |
| 297        | PRINTER        | HP              | LASERJET, L5                        | 04/11/96     | JPBW004198   | L5          | 647.96  | MOSCOW OFF  | 3200     |

Records printed: 32

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 \$33,386.75

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