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Interim Assessment of Project 538-0134  
Regional Pharmaceuticals Management Project (RPMP)

prepared by

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### Acknowledgements

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Assessments can often generate anxiety and concern by those who are closely associated with the activity under review. The management and staff of ECDS and the members of the technical assistance team (MSH) are to be complimented for the manner in which each responded openly, honestly, and fully to the many burdensome requests for information made by the assessment team. While continuing to conduct daily tasks critical to the achievement of project objectives, each person made every effort to give the assessment team the data or explanation requested.

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## Summary

### Mid-term Assessment of Project 538-0134 Regional Pharmaceuticals Management Project

1. Time of the Assessment and Members of the Assessment Team. The USAID Regional Development Office/Caribbean requested a mid-project assessment of the Regional Pharmaceuticals Management Project (RPMP-USAID Project Number 538-0134). The assessment took place from January 19 to February 5, 1988. The names of the team members are listed below, along with each person's area of responsibility. (See Appendix A-Scope of Work.)

Ms. Sylvia Charles - Finance  
Mr. John Gilmartin - Procurement/Quality Assurance  
Mr. Lennox Prescod - Procurement/Formulary  
Ms. Anne Tinker - Program Design/Policy  
Dr. John B. Tomaro - Management/Administration

The findings and recommendations were presented to Dr. Vaughan Lewis of the Organisation of Eastern Caribbean States and the management and staff of the Eastern Caribbean Drug Service (ECDS) on February 5, 1988, and to the management and staff of USAID/RDO/C on February 6, 1988.

2. Purpose of the Project. The Regional Pharmaceutical Management Project was authorized by USAID in 1985 and designed to assist Antigua/Barbuda<sup>1</sup>, Dominica, Grenada, Montserrat, St. Kitts and Nevis, St. Lucia, and St. Vincent and the Grenadines to develop policies and programs that would result in more efficient utilization of country specific health sector resources through improved procurement, management, and use of pharmaceuticals. Headquartered at the Organisation of Eastern Caribbean States (OECS) in St. Lucia, the project has begun to implement a pooled procurement mechanism and to improve supply management practices through the establishment of the Eastern Caribbean Drug Service (ECDS). By the project completion date, August 5, 1990, ECDS is expected to have sufficient institutional capacity to self-finance the drug procurement services for the participating countries.

The RPMP was designed to increase the cost-effectiveness of public sector programs in the participating countries through improved design, management, and implementation of systems to procure, store,

<sup>1</sup>Although the project design anticipated participation by all the countries mentioned, Antigua/Barbuda has chosen not to take part.

distribute, and use pharmaceuticals. Through pooled, regional procurement and improvements in their drug management and distribution systems, the participating countries are expected to resolve critical problems, e.g., drug shortages, expired products, and to lower the unit costs of pharmaceuticals. In addition, the RPMP has been viewed as a potential model for regional cooperation, one that could achieve economies of scale and better utilization of resources for the participating countries.

3. Purpose of the Assessment and Methodology Used. As a requirement of the project, the interim assessment was undertaken to determine progress to date (through December 31, 1987) and to suggest measures that should be implemented to ensure that project objectives are achieved. The findings and recommendations formulated and presented are based on a review of project documents and interviews with, among others, the management of ECDS, members of the Management Sciences for Health (MSH) technical assistance team, the staff of USAID/RDO/C, and the Ministries of Health and Finance of the participating countries.
4. Conclusions. The findings that follow respond to the issues raised in the scope of work, prepared by USAID/RDO/C, and presented to the team by Dr. Vaughan Lewis, Director General of OECS. An attempt has been made to present only the most important findings. At the start, it is important to record the principal accomplishments to date.

#### Accomplishments:

1. Management. Management and staff of the Eastern Caribbean Drug Service have been assembled and, within one year of project launch, have successfully completed a tender and procurement cycle. In addition, standing committees for policy, tendering, and formulary have been formed and have met.

Through the training provided by the technical assistance team attached to ECDS, the health personnel responsible for procuring, storing, and distributing drugs have enhanced their capacity to manage their pharmaceutical supply systems.

RPMP resources are beginning to contribute to the increased effectiveness of the pharmaceutical management systems in the participating countries, especially in Dominica where reforms in the pharmaceutical supply system antedated the RPMP.

2. The Procurement System. ECDS has established systems to estimate the drug needs of the participating countries and to procure the needed supplies. The assessment of the procurement practices implemented suggests that the project is having a positive impact on the pharmaceutical supply systems of the participating countries. In general, the system implemented by ECDS is working well, and the tender and procurement procedures are adequate.

In the course of completing the first tender under the pooled procurement process, ECDS achieved significant price reductions for pharmaceuticals and enhanced the purchasing power of the drug budgets of the participating countries.

Regional and national formularies have been developed or drafted for all the participating countries. This development represents a first step toward achieving a more systematic and streamlined approach to drug procurement at the central level and drug use at the periphery of the health system.

3. Financial Operations. The financial system established for approving vouchers, forecasting project expenditures, and tracking project costs appears to be adequate. The system seems to have sufficient checks and balances.

Based on the current volume of pharmaceuticals procured through the pooled system, ECDS has achieved a significant reduction in the unit price of pharmaceuticals and appears on the road to generating the revenues required to cover the costs of managing the system.

The drug reimbursement system has been working reasonably well. The Eastern Caribbean Central Bank (ECCB) has been making prompt payments to suppliers. Three of the six participating countries have responded enthusiastically by replenishing their drug accounts on the strength of suppliers' invoices and before reimbursement claims from ECCB.

4. Project Implementation. Working through ECDS the technical assistance team has trained staff of the central medical stores in the proper use of a computer-based management information system that should improve the forecasting of pharmaceutical needs and the monitoring of receipt, storage, and distribution of the items procured.

With only one exception, the project has had a positive impact on the appearance of the storage facilities and on the quality of warehousing practices among the participating countries.

The reduction achieved in the time required to clear pharmaceuticals from the port has been universally acknowledged as a significant accomplishment of the project.

There is wide recognition in the region that some measures should be implemented to recover a percentage of the cost of pharmaceuticals. ECDS is a procurement service and probably should not participate directly in the policy dialogue related to cost recovery. While ECDS can track changes in attitudes related to user fees, and can provide important data on such matters as trends in drug budgets and prescribing and utilization patterns, the project does not operate at a level likely to influence key decisionmakers. This role is more appropriately left to those responsible for influencing

national policy, e.g., OECS, and to donor agencies operating in the region.

5. Project Performance. The rationale for establishing a regional system to improve pharmaceutical supply services and reduce the unit cost of pharmaceuticals is valid. The efficiencies achieved through pooled procurement should help control costs in times of fiscal constraints, ensure that the population has access to essential drugs, and lead to improvements in health status.

The principal concerns relative to the project appear below. These have been grouped according to the different functional activities of the project. ECDS should review and fully address each.

Concerns:

1. Management. There is ambiguity in the lines of authority and responsibility in the current management structure of the project.

There is a noticeable lack of understanding of the role of ECDS at the country level, and almost no written information in the participating countries that outlines the services available under the project.

The Policy Board has met only once since the inception of the project. Its understanding of and relationship to project objectives and activities is not entirely clear.

2. The Procurement System. Information suggests that during the first tender cycle the decision rules for selecting suppliers were not clearly defined and routinely implemented. When selecting pharmaceutical suppliers, procedures should be scrupulously followed.

There is a perception on the part of some personnel, especially those charged with dispensing the newly procured pharmaceuticals, that there may be some relationship between a lower price and inferior quality.

3. Financial Operations. Unless there is an increase in the number of countries participating in the pooled procurement system, or a limited number of consumable medical supplies are added to the list of items procured by ECDS, there is concern that the value of the items purchased through the procurement system may fall below the amount needed to cover the cost of operations.
4. Project Implementation. Use of the management information systems by staff of the central medical stores (CMS) varies widely among the countries.

While the operations of all the CMS have benefitted from the technical assistance provided through the project, the CMS were

visited shortly after the departure of the long-term technicians. It remains to be seen whether the systems installed are being maintained.

ECDS' inability to involve the private sector is understandable. It is, however, of some concern that ECDS has not systematically informed the private sector about the project or, with the assistance and concurrence of the governments of the participating countries, invited members of the private sector to attend appropriate conferences and/or training workshops. Still, this matter requires careful study. While there is expressed interest on the part of some private sector pharmacists to participate in the system, there are legal, policy, fiscal, and programmatic concerns, as well as the reservations of private physicians and some pharmacists that must be addressed and resolved before expanding the procurement system.

5. Project Performance. A review of the objectives, activities, and time frame of the project suggests that the original design may have been overly ambitious. It might have been unduly optimistic for USAID to assume that the project could directly influence regional policy on cost recovery and that ECDS could achieve financial self-sufficiency before the project completion date (August 1990).

Since the interim assessment took place shortly after the long-term technical advisors had left the region, it is difficult to determine the extent to which the recipients of the technical assistance have fully incorporated the information in their daily routines.

A Final Comment. The RPMP is an important and complex project. The project is important because it is a promising model for cooperation within the Caribbean region. The RPMP is designed to improve the health delivery systems of six countries, not just one. The project offers an opportunity to streamline pharmaceutical distribution, prescription, and use patterns, ensure better coverage (equity) of the populations of the participating countries, and contain costs. In times of delicate and hard-pressed economies and national budgets, the difficulty of containing costs while ensuring coverage cannot be underestimated.

The RPMP is a complex project because it is operating in six countries. While all are relatively homogeneous in terms of history and culture, and social, political, and economic systems, each is also unique. Each country must be understood and given the information needed to "buy-in" to the project. Finally, because of the essential and unique importance of drugs and what they represent, pharmaceutical procurement is complicated. Within the context of regional politics and budget constraints, pharmaceutical procurement is more difficult.

The RPMP should be commended on a number of accomplishments: the establishment of ECDS, the completion of one tender cycle, and the upgrading of pharmaceutical management systems in the participating

countries. With the departure of the technical assistance staff, the fate of the project and ECDS is at a critical point. It is in the interest of USAID to recognize fully the importance and complexity of the project and the fact that fewer resources are available to do an increasing amount of work, and to provide the assistance necessary to ensure project success.

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Interim Assessment of Project 538-0134  
Regional Pharmaceuticals Management Project

I. Introduction

The Regional Pharmaceuticals Management Project (RPMP), a five-year project authorized by USAID in 1985, was designed to assist Antigua/Barbuda, Dominica, Grenada, Montserrat, St. Kitts and Nevis, St. Lucia, and St. Vincent and the Grenadines to develop policies and programs that would result in more efficient utilization of country-specific health sector resources through improved procurement, management, and use of pharmaceuticals.<sup>1</sup> Located on St. Lucia at the headquarters of the Organisation of Eastern Caribbean States (OECS),<sup>2</sup> the RPMP was initiated to achieve the following objectives:

1. Establish an Eastern Caribbean Drug Service (ECDS) responsible for designing and implementing a pooled pharmaceutical procurement system for the participating countries.
2. Ensure that the pooled procurement system allows the participating countries to obtain pharmaceuticals of high quality at significantly reduced unit prices (25 percent less).
3. Have ECDS manage procurement activities in a manner that ensures that at the close of the project period all operations can be supported by the procurement fees (15 percent) charged to the participating countries for the pharmaceuticals procured on their behalf.
4. Assist the participating countries to improve their drug management and distribution systems through extensive training and the design and implementation of management information systems.
5. Promote the managerial and financial successes of ECDS as one potential model of the benefits that can be derived from regional cooperation.

Interim assessments of the five-year project were specified by USAID in both the Project Paper and the Cooperative Agreement with OECS for the purpose of:

- measuring the extent to which the project is moving toward achieving the stated objectives; and, if necessary,

<sup>1</sup>Although the project design anticipated participation by all the countries mentioned, Antigua/Barbuda has chosen not to take part.

<sup>2</sup>Eight small English-speaking countries comprise the membership of the OECS, an organization established by treaty for the purpose of fostering economic, social and political advancement of the region. (See Figure 1: Map of the Eastern Caribbean.)

- suggesting what should be done to ensure that the project achieves intended objectives.

The first assessment was carried out between January 19 and February 5, 1988 by a five-member team consisting of:

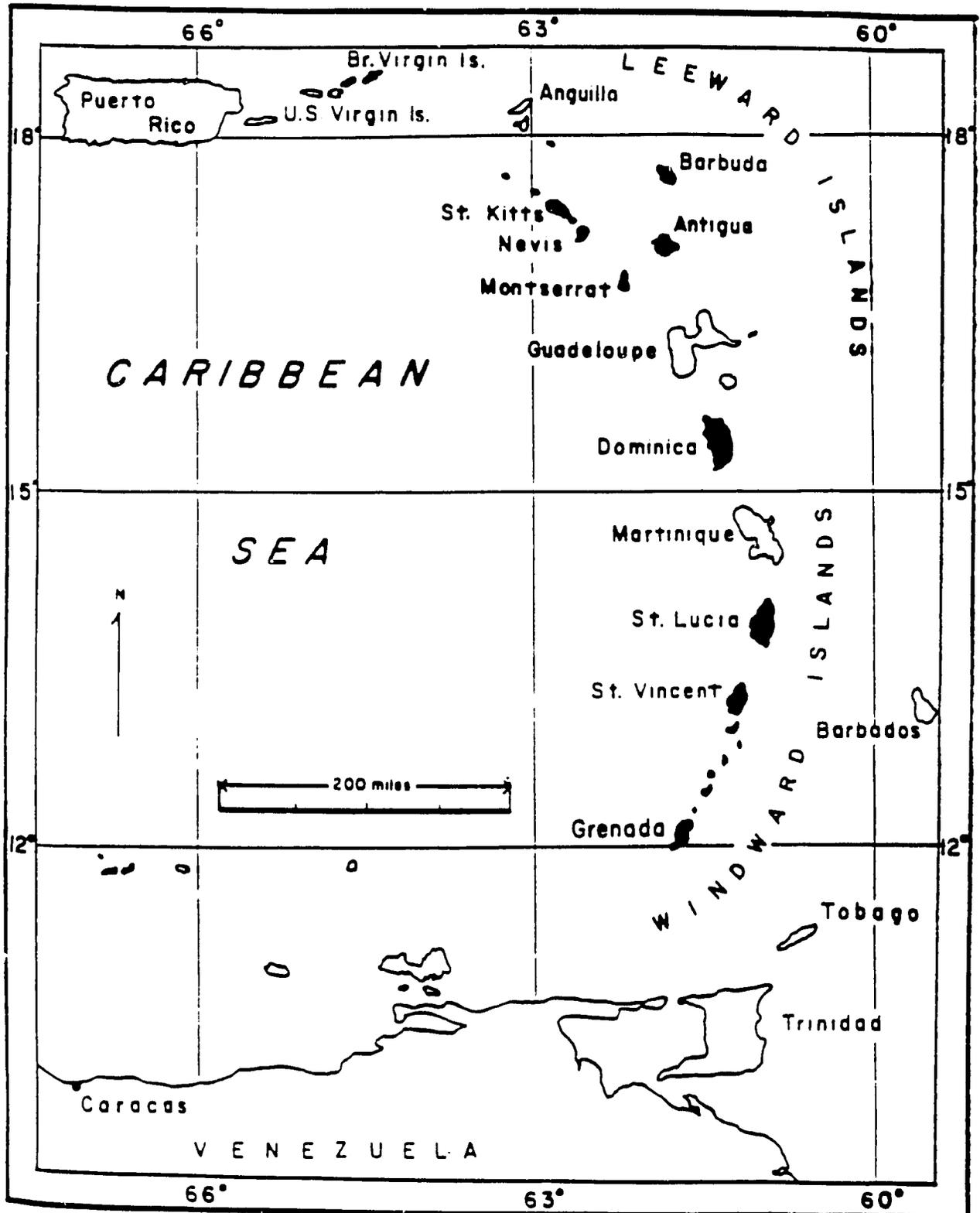
Ms. Sylvia Charles - Finance  
Mr. John Gilmartin - Procurement/Quality Assurance  
Mr. Lennox Prescod - Procurement/Formulary  
Ms. Anne Tinker - Program Design/Policy  
Dr. John B. Tomaro - Management/Administration

The terms of reference (TOR) for the mid-term assessment were defined by USAID and OECS (see Appendix A). The findings and recommendations of the assessment team were presented to Dr. Vaughan Lewis, Director General of the OECS, and the management and staff of ECDS on February 5, 1988, and to the management and staff of USAID/RDO/C on February 6, 1988.

The report that follows has five principal sections, as suggested in the TOR. The first presents information on the management structure of ECDS; the second reviews pharmaceutical procurement practices and issues relevant to procurement, e.g., price and quality; the third analyzes the financial operations of the project; the fourth examines, the status of project implementation at the ECDS and country levels, and the last section assesses select issues in project performance through December 31, 1987.

Figure 1

# THE EASTERN CARIBBEAN



■ Members of the Organisation of Eastern Caribbean States (OECS)

## II. Management Structure of the Eastern Caribbean Drug Service

### A. Management Structure of ECDS and Relationships with OECS and the Technical Assistance Team

The organization chart presented as Figure 2 illustrates the management structure of the ECDS, the agency established in 1986 to facilitate the procurement and supply of pharmaceuticals for the six countries participating in the RPMP. The chart notes the staffing levels of ECDS—three senior staff from three different participating countries. It also depicts the associations between ECDS and OECS, the regional authority, and between ECDS and the technical assistance team, Management Sciences for Health (MSH), contracted to work with ECDS to fulfill its institutional mandate. Figure 3, entitled Organizational Staffing and Relationships, depicts the structural relationships between ECDS, OECS, the technical assistance team, and the individual pharmaceutical supply systems of the participating countries.

These structures were proposed in the Project Paper and have been carried out over the last two years. On review, two deficiencies become obvious. First, as currently defined, there are no clear lines of authority and responsibility in the management structure of the project. Both the Associate Director of ECDS (Director in training) and the Technical Assistance Team Leader and project coordinator (MSH) report directly to the Director General of OECS. In addition, their relationship to each other is ill-defined.

In effect, the project has two relatively independent management teams. The existing structure has created confusion and some conflict between the management and staff of ECDS and the members of the technical assistance team. In this management arrangement, it is difficult for managers and staff from the different institutions—ECDS and the MSH technical assistance team—to understand clearly their individual roles and responsibilities, to comprehend the proper mode of interaction, and to feel sufficiently empowered to carry out duties.

The second point is of equal importance and closely related to the first. The project was designed to accomplish two critically important yet difficult objectives simultaneously. With the help of the technical assistance team, OECS was to establish an institution, wholly new to the region, directed and managed by a professional staff new to addressing and resolving regional as opposed to country-specific issues. At the same time, the infant institution was responsible for carrying out five principal functions:

1. Manage operations effectively and work to ensure continuing participation, as well as new enrollment, by members of OECS in the pooled procurement system;
2. Design and carry out information systems needed to track the administrative finances of ECDS and those associated with obtaining pharmaceuticals for the participating countries, as well as design and

implement a system to monitor inventories and estimate quantities to be ordered;

3. Procure pharmaceuticals for the participating countries in the most efficient and cost-effective manner;
4. Identify and train personnel at all levels of the health systems of the participating countries who deal with the issues of estimating, storing, distributing, and dispensing pharmaceuticals; and
5. Develop and disseminate regional and country-specific formularies, containing agreed-upon lists of essential drugs and treatment therapies with health personnel of the participating countries.

From the date of project launch the OECS, using resources provided by the RPMP, was to establish the ECDS and carry out the functions assigned to the new institution. Simultaneous with recruiting and training staff and setting up an administrative office on St. Lucia, the project was to initiate and complete a wide range of activities at both "the regional and country level."<sup>3</sup> In addition, since one of the ultimate objectives of the project was to execute the many functions mentioned above on an annual basis for an amount no greater than 15 percent of the total cost of the pharmaceuticals procured for the participating countries, only a very limited staff could be, and was recruited, to direct the operations of the ECDS.

The management structure proposed and implemented has placed a very heavy burden on the management and staff of ECDS, and especially on the technical assistance team furnished by MSH and charged with working with ECDS to develop the capacity needed to carry out the tasks assigned. Those familiar with the issues of institutional development readily recognize that it is both difficult and time consuming to establish an organization and foster within it the capabilities required to function effectively.

An effective institution exhibits significant capability in at least nine different functional areas. The areas are listed below along with brief statements suggesting the meaning of that particular organizational quality or characteristic.

- Organizational autonomy. Does the organization define organizational policies and set goals and regard this activity as central to its identity?
- Leadership. Do key managers have a clear sense of the organization's mission and demonstrable competence?

<sup>3</sup>USAID/Caribbean Regional Project Paper, "Regional Pharmaceutical Management Project," 35.

- Management and administration. Are the roles and responsibilities of management and staff clearly understood and communicated within the organization and to the outside environment?
- Commercial orientation. Are the actions guided by budgets and a concern for the cost implication of any action?
- Consumer orientation. Are the decisions and actions of the staff driven by a concern for doing what might best satisfy the consumer of the organization's goods or services?
- Technical capability. Do those responsible make consistently sound technical decisions, and conduct studies and planning exercises as required?
- Recruiting, retaining, and developing staff. Does the organization promote activities directed toward recruiting staff, provide the training required to do the job and grow professionally, and offer job satisfaction adequate to maintain competent personnel?
- Organizational culture. Do staff communicate a sense of pride and ownership in the organization?
- Interactions with key external institutions. Does management maintain direct contact with key people in all external organizations (Ministry of Health)?

To the credit of all involved, ECDS has been able to achieve varying degrees of capability in each of these categories. However, since the implementation schedule of the RPMP proposed the establishment of ECDS and the immediate execution of regional and country-specific activities, the management and staff of ECDS had only limited time to develop a sense of identity as a unique institution. Moreover, the technical assistance team was put in a position of both advising the newly formed staff of ECDS and:

- developing the institutional capacity of ECDS and providing management and staff with the skills needed to carry out all operations of the project;
- designing management information systems (MIS) needed by ECDS;
- designing and working with management and staff of ECDS to carry out a pooled pharmaceutical procurement system for the participating countries;
- working with ECDS and the ministries of the health of the participating countries to prepare formularies;
- conducting country assessments of the policies and practices associated with pharmaceutical procurement, storage, distribution, and dispensing of the participating countries; and

- working with ECDS to train country level staff to understand and operate the new systems and practices.

During the period under review and certainly during the first two years of the project, the technical assistance team may have been more actively involved in the execution of the tasks than in advising ECDS how to manage the tasks.

As a result, there has been some confusion and some conflict between the management and staff of ECDS and the members of the technical assistance team. In addition, as noted below, the personnel of the ministries of health in the participating countries do not have a clear definition of the purpose of ECDS and the role of the technical assistance team. Given the project design, this outcome should have been anticipated.

While noting the flaws in the project design and the management structure that have adversely influenced the operations of the ECDS and the project, it should be emphasized that all involved in the project readily recognized the potential for conflict and confusion and generally moved expeditiously to establish effective personal and professional relationships and smooth institutional operations. Progress to date may in some measure be due to the capability and good will of the professionals involved and to the vision and energy of the Director General of the OECS rather than the management structure and design of the project. It should also be noted that ECDS is still developing. Staffing levels and individual roles are evolving. While it might appear that an additional senior professional might be essential, ECDS must assess carefully the impact of the added cost on the project's prospects for financial viability.

B. Relationship between ECDS and the Pharmaceutical Supply Systems of the Participating Countries

In the end, success of the project will be measured by the degree to which the countries of the OECS participate fully in the pooled procurement system operated by ECDS and realize reductions in the unit cost of pharmaceuticals. Without accurate information on drug needs and timely orders, however, the ECDS cannot serve the needs of the participating countries and meet its organizational objective.

The Project Paper for the RPMP gave special attention to defining the interventions that would be needed to improve pharmaceutical management at the country level. Over the last two years, efforts have been made:

- to improve forecasting, inventory control, and stock management;
- to upgrade storage facilities; and
- to enhance the capacity of staff charged with estimating, procuring, storing, and distributing pharmaceuticals.

Primary responsibility for carrying out these tasks was assigned to two technical assistance advisors, employed by MSH, who had extensive expertise in logistics management.

During the first eighteen months of the project, one advisor, based in St. Vincent and the Grenadines, worked with the central supply officers and their staffs on Grenada and St. Vincent and the Grenadines. The other logistics adviser, based on St. Kitts and Nevis, worked with those responsible for the drug management systems on Dominica, Montserrat, and St. Kitts and Nevis.

In general, the Chief Medical Officers and those charged with managing the pharmaceutical systems of the participating countries project a favorable attitude toward the objectives of the RPMP. In most countries (Dominica may be the exception), the evidence collected by the assessment team suggests that before project launch there was some general awareness that drug budgets were increasing annually, that shortages and stock-outs were occurring regularly, and that estimating storage and distributions systems were less than adequate. The work of the logistics advisers has been favorably appraised by the participating country personnel, though the impact of their efforts varies by country.

Until recently, those responsible for pharmaceutical management in the participating countries had primary contact with ECDS and the RPMP through the logistics advisers who were members of the technical assistance team. Few members of the health delivery systems of the participating countries recalled any direct contact with the management and staff of ECDS nor did they clearly understand the relationship between the technical assistance team and the ECDS. Some also had difficulty understanding the relationship between the objectives of the RPMP and the role of ECDS. While generally supportive of the project, some concern was expressed about the utility and value of ECDS. Since the senior staff at ECDS were totally involved with central-level activities during the first 18 months of operations, this finding is not surprising. It is only noted to emphasize the fact that central-office staff should begin to visit the countries as soon as possible to retain and enhance the momentum initiated by the long-term technical advisers.

Since the logistics advisers had left the region before the assessment was conducted, it was not possible to obtain their views on this issue. However, with their departure and the absence of regular, direct contact with the staff of ECDS, there is some concern that the distinction between the importance of the objective (reducing unit costs for pharmaceuticals, etc.) and the need to support and work with the institution (ECDS) may be valid. In addition, there is some concern that unless links are established between ECDS and the country-level activities, the momentum and impact of project implementation may be diminished, and the viability of the institution may be jeopardized.

Figure 2

ECDS ORGANIZATIONAL CHART

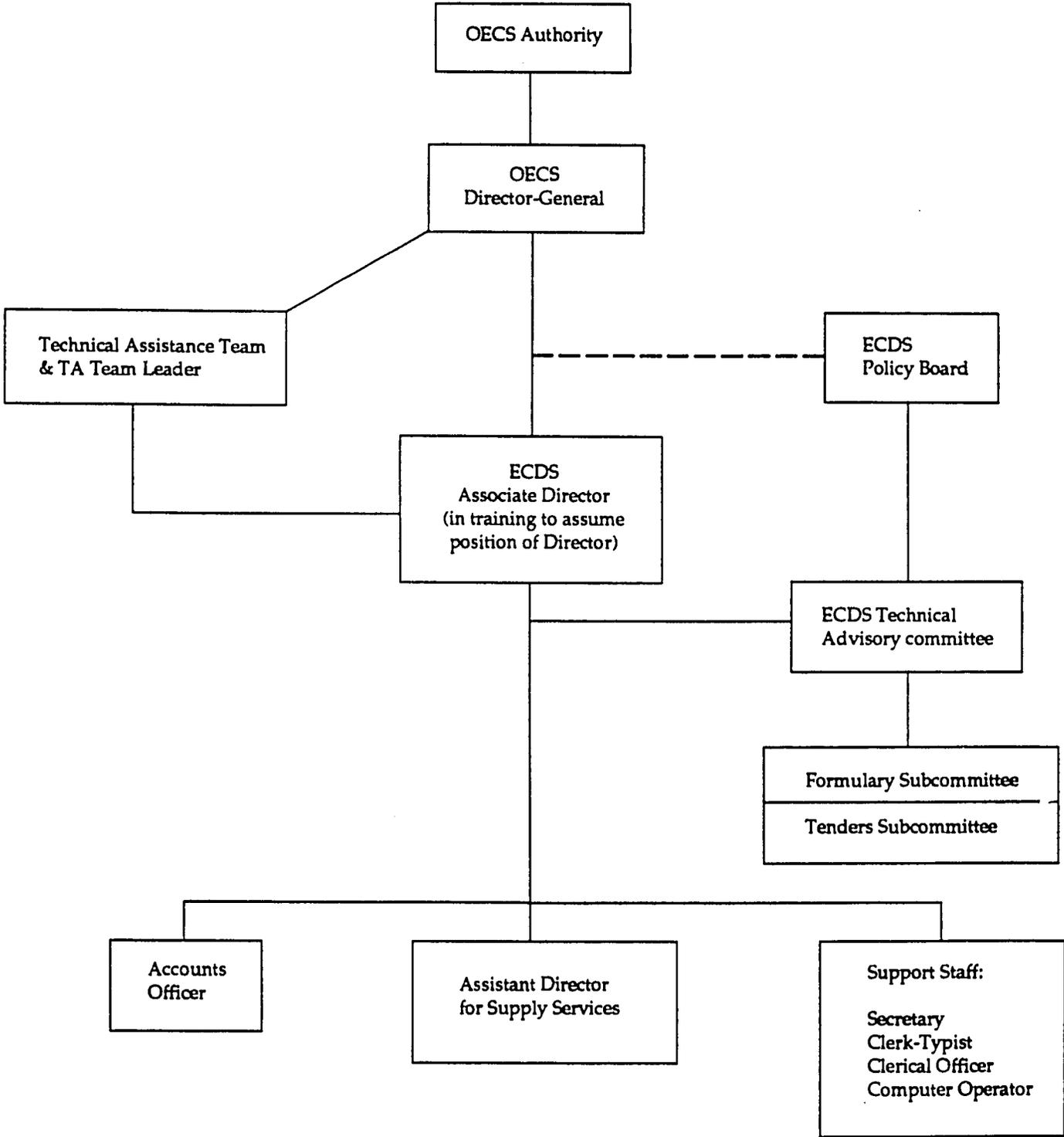
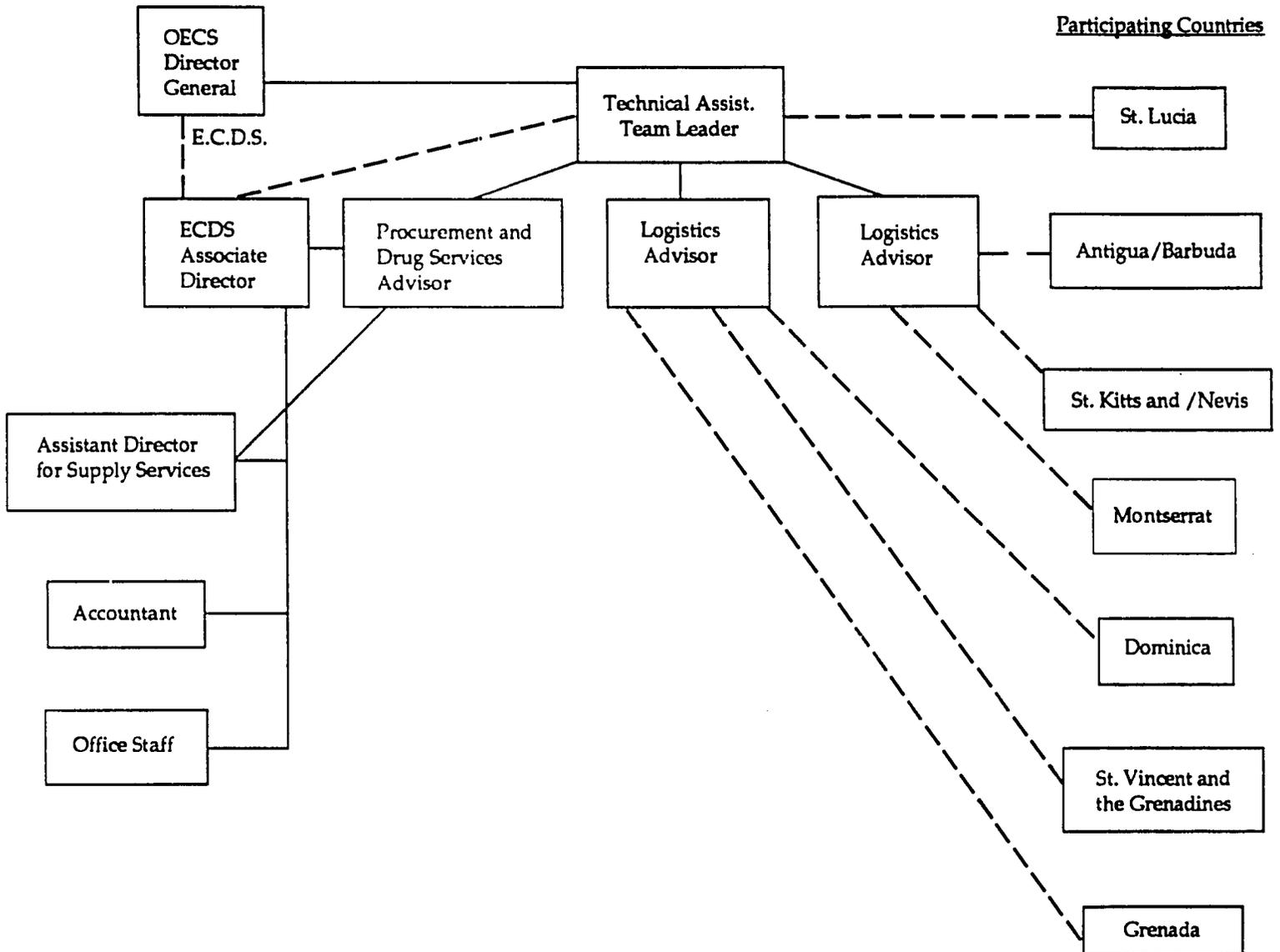


Figure 3

ORGANIZATIONAL STAFFING AND RELATIONSHIPS

Technical Assistance Team

Participating Countries



C. Relationship between ECDS and the Policy Board and Technical Subcommittees

To ensure that ECDS is responsive to the needs of the ministries of the participating countries, the Project Paper proposed the establishment of a Policy Board and two technical subcommittees, one for tenders and one for formulary. All policy or strategic decisions are to be made by the country representatives who serve on the ECDS Policy Board or one of the two subcommittees. The six Ministers of Health, the Director General of OECS, the Associate Director of ECDS, and the Governor of the Eastern Caribbean Central Bank comprise the Policy Board. The OECS serves as secretariat to the Policy Board.

The Formulary and Therapeutics Subcommittee, consisting of the Chief Medical Officer or another senior physician delegated to serve as a country's representative, is responsible for the regional and country formulary process. The Chief Pharmacists or Supplies Officers from each country serve on the Tenders Subcommittee. The Tenders Subcommittee selects suppliers who will be invited to tender offers on the pharmaceutical needs of the participating countries, selects the products for which tenders will be invited, and adjudicates the award of contracts.<sup>4</sup>

As proposed in the Project Paper, the Policy Board was to meet at least annually and even more often during the first two years of the project. "The funds required to convene the annual meetings [were] anticipated in the estimates of the ECDS recurrent operating budget, [and grants were provided to fund] the additional early meetings."<sup>5</sup> Viewed by the drafters of the Project Paper as one of the keys to the success of the project, the Policy Board was designed to give overall direction to the project and to be a forum for discussing and testing more regional cooperation.

During the first 18 months of the project, the Policy Board met only once. A second meeting, planned for November 1987, was postponed because the interim assessment was scheduled to take place in the same month. The absence of meetings may not have affected the operations of the RPMP, as ECDS and the technical assistance team suggest. Also, since the attendance of the members of the Policy Board is supported by project resources, the savings realized may be important.

Given the ambitious implementation schedule of the project, the limited staff available to travel and interact with ministry personnel in their place of residence, and the need to show positive accomplishments as early as possible, it is hard to question the decision to delay the meetings of the Policy Board and to make other issues higher priorities. Still, the need to foster support for the RPMP from among the ministries of the

<sup>4</sup>Since the activities of the Formulary and Tender Subcommittees are reviewed elsewhere in this report, this section will only focus on the role of the Policy Board.

<sup>5</sup>USAID/Caribbean Regional Project Paper. "Regional Pharmaceutical Management Project," Project Number 538-0134, 1985, 36.

participating countries would suggest that efforts should have been made to see that the Policy Board had a larger and more active role in the project.

#### D. Conclusions and Recommendations

Since the ECDS was an entirely new institution at the start of the project, it can be argued that the management structure, defined in the Project Paper and implemented, was warranted. The management and staff of ECDS have been working together for 18 months. All have benefited from the efforts of the technical assistance team. It is time to test the value of that assistance by giving full management authority to the Associate Director of ECDS (the Director in training) and to require the Technical Assistance Project Coordinator, and members of the technical assistance team through her, to report directly to the Associate Director of ECDS. The viability of ECDS as an institution is directly related to the commitment and competence of the management and staff. Without full authority, the responsible manager cannot expect to achieve project objectives.

Given the limited staff of ECDS and the need to contain administrative costs, it is suggested that the technical assistance team focus on training the staff of ECDS and the personnel of the participating countries during the remaining years of the project.<sup>6</sup> Training should be in the area of pharmaceutical procurement as requested by ECDS and the participating countries. In addition, the technical assistance team should continue to provide assistance in the development of the regional and country-specific formularies. Management of ECDS should focus attention on the procurement, communication and financial functions, and call on the technical assistance team to provide expertise as needed.

As discussed above, there is a noticeable lack of understanding of the role of ECDS at the country level. Without the presence of the logistics advisors, who may have been viewed as staff of the technical assistance team (MSH) rather than the staff of ECDS, it is imperative that the managers of ECDS move quickly to establish effective links with the key decision-makers and health personnel responsible for pharmaceutical procurement, storage, and distribution at the country level. There is a critical need to involve and educate the policymakers and others at all levels of the health system about the value of continued and increased participation in ECDS.

As soon as possible, ECDS should prepare and distribute widely a brochure that outlines the services available under the project. This brochure, along with country-specific information presented during visits to the participating countries, should make a case for the importance of ECDS by precisely outlining and defining the meaning and impact of the benefits to

<sup>6</sup>The project has made a significant training effort to date. According to a letter of October 4, 1988, the project has completed 891 person days of training and 11.5 person months in training, and produced 23 training manuals.

be gained through participation, e.g, savings realized, volume and quality of commodities provided, type and number of personnel trained, etc. It is also important for ECDS to work with each participating country to increase public awareness of the cost of pharmaceuticals and their proper and effective use.

The Policy Board has met since the inception of the project. Its understanding of and relationship to project objectives and activities is unclear. Given the importance of the RPMP as a potential model for regional cooperation and cost-effective use of limited governmental resources, the Policy Board should be informed and, to the maximum extent possible, involved. As resources and opportunity permit, the Policy Board should be encouraged to represent the principal political and technical concerns of the participating countries and provide ECDS with vital inputs.

ECDS should work to ensure that the Policy Board plays a more active role in the project. This implies that the Policy Board should be viewed as a forum in which information can be provided, exchanged, and discussed. In this light, and as resources allow, ECDS should encourage more frequent meetings and discussions, assist in the preparation of briefing documents related to the agendas, see that each member of the Policy Board is given country-specific information, and carry out measures that reflect the policies defined.

### III. The Procurement System: Design and Implementation

#### A. Procurement and Tendering Procedures and Practices

ECDS was established to design and implement a pooled pharmaceutical system that would allow the participating countries to obtain pharmaceuticals of high quality at significantly reduced unit prices (25 percent). Before the initiation of ECDS, Supplies Officers in the individual participating countries had very little information on which to base their drug procurement decisions. Some procurement officers might have access to several price lists from suppliers, but the lists might not be up-to-date. In addition, the price lists would often not contain information on the lead times for delivery, the source and quality of the pharmaceuticals, or the pricing or payment terms.

Frequently, the Supplies Officers based their procurement decisions on inadequate records and on information supplied by the manufacturers' representatives, a group that by definition does not represent the interests of the ministry of health. The procurement practices in place before the establishment of ECDS resulted in<sup>7</sup> inefficiencies and annually increasing expenditures for pharmaceuticals.

Faced with a need to contain costs by bringing drug budgets under control, the ministries of health of six countries of the OECS endorsed the objectives of the RPMP and contracted to purchase pharmaceuticals through the ECDS. ECDS was given a sole source commitment, meaning that items listed in contracts between ECDS and the pharmaceutical suppliers chosen through the tender process could only be purchased by the governments through ECDS. By pooling drug procurement the individual countries hoped to achieve greater bargaining power with the suppliers, measured in terms of price, quality, and delivery times.

While establishing and operating the pooled procurement system, ECDS, working with the technical assistance team and country-level personnel responsible for pharmaceutical supplies, had to define and implement the following tasks:

- an assessment of country-specific forecasting, procurement, storage, distribution and dispensing practices;
- a review of the qualifications of the professional staff charged with managing pharmaceutical supply systems in the participating countries;
- the initiation of training programs designed to improve the capacity of country-specific personnel involved in forecasting pharmaceutical requirements, managing inventories, and distributing supplies;

<sup>7</sup>These conditions are not uncommon. See Stephen J. Fabricant and Norbert Hirschhorn, "Deranged distribution, perverse prescription, unprotected use: the irrationality of pharmaceuticals in the developing world," Health Policy and Planning, 2(3), 1987, 204-213.

- the establishment of a Tenders Subcommittee responsible for determining the list of pharmaceuticals needed, reviewing bids from suppliers, adjudicating the bids, and awarding contracts, etc.;
- the development of a management information system suitable for use by ECDS and the supplies officers of the participating countries as an aid in forecasting drug needs, tracking inventories, processing purchase orders, etc.; and
- the publication of regional and country-specific formularies establishing the lists of essential drugs and the appropriate course of therapy.

None of these tasks has been nor could be conducted in isolation. The execution of each task had a direct influence on the definition and implementation of the others. The results achieved in completing one activity influenced what could be achieved from another activity. The process of developing and improving a pharmaceutical supply system for the Eastern Caribbean region has been iterative.

While defining and carrying out each task, ECDS has had to be aware of the milieu in which the procurement operations take place. The tasks related to analyzing, defining and implementing a system had to be defined in the context of the:

- economic and financial status of the countries of the OECS,
- capacities and experience of the personnel of the health systems in the region,
- levels of awareness and education of the prescribers, dispensers and users (consumers) of the pharmaceuticals procured through the system, and
- expectations of the political authority.

Within this context a procurement process has been established that enables individual countries to estimate their annual pharmaceutical needs and to inform ECDS. ECDS reviews the information provided and, through the Tenders Subcommittee, coordinates the placement of contracts with suppliers. Once the contracts are in place, the supplies officers of the participating countries send purchase orders to ECDS. The orders are processed by the staff of ECDS. This system is based on a MIS that was developed specifically for the project and, when used properly, appears to provide accurate and reliable information (see Appendix B, Report on ECDS and CMS Computer Systems).

In most of the participating countries the mechanics of the procurement process are in place and working reasonably well. In time and with additional staff training, the efficiency of the system should improve. However, quantum improvements in the overall operations of the system are not likely to occur until the following issues are addressed and resolved:

First, the dispensers, usually pharmacists, who work at the periphery of the health delivery systems of the participating countries, must be more fully involved in the system and the project. These people have direct contact with consumers of the pharmaceuticals procured through ECDS. They are in the best position to provide information on consumer habits and expectations to the Central Medical Stores and to motivate consumers to alter these same habits and expectations. For example, unless these professionals believe that a cost recovery system for pharmaceuticals is appropriate, one is not likely to be endorsed and implemented. Also, this group has a large effect on consumer compliance and needs to be fully advised when and why pharmaceutical suppliers have been changed.

Second, while the information systems in place at the CMS are working reasonably well, in some of the participating countries much of the information is not up-to-date. For a variety of reasons, some of the supplies officers are not maintaining the system on a routine basis. As a result, these same supplies officers have found it necessary to place "emergency orders" for pharmaceuticals. Some of these officers may not clearly understand the benefits to be derived from changing past procurement practices and participating in ECDS. This situation suggests that ECDS needs to work ever more closely with the supplies officers to understand their problems and to explain the value of the new procurement system.

Third, ECDS needs to develop better guidelines for use by the Tenders Subcommittee. While ECDS, the technical assistance team and the supplies officers of the participating countries should be complimented on the rapidity with which the Tenders Subcommittee was established and involved in the first procurement, the decision-rules for procurement should be more clearly defined and routinely implemented. The current deficiencies and the corrective actions suggested appear in the following section that examines the first procurement by ECDS.

#### B. Review and Analysis of the First Tender and Procurement Cycle

The assessment team reviewed the documents pertinent to the first tender and procurement cycle according to the criteria specified in the TOR.<sup>8</sup> The findings appear below.

1. Adequacy of the System. In general, the tender and procurement procedures are adequate. However, certain deficiencies need to be addressed.

The procedures for selecting new pharmaceutical suppliers should be followed scrupulously. For two suppliers, ECHO and IMPAS, exceptions were made that allowed them to bid in a different manner than

<sup>8</sup>The first ECDS contracts with suppliers were effective June 1, 1987. One hundred suppliers had been invited to tender; sixty-six responded; and twenty-five were awarded regional contracts." ECDS, Fifth and Sixth Quarterly Reports, June 1 through November 30, 1987, p. 24.

specified.<sup>9</sup> ECDS should insist that all suppliers, whether manufacturers or distributors, provide:

- a. complete information on the manufacturer,
- b. country of origin of the product and verification that the product is used in that country,
- c. pharmacopeia referencing the product,
- d. WHO certification,
- e. samples of the product, and
- f. customer references.

Suppliers play a critical role in the procurement system. ECDS has to pay particular attention to the reputation of suppliers with respect to their ability to provide products of high quality in a timely manner. Each new supplier has to be carefully scrutinized. ECDS must obtain samples and certificates of analysis for all products. As ECDS has learned during the first year of operations, supplies officers tend to lose confidence in the system when products never before seen arrive at their warehouses.

Unless ECDS conducts all procurement practices in a consistent and open manner, potential suppliers lose confidence in the service and fail to bid.

The language of the tender documents and contracts with selected suppliers should be strengthened. ECDS should insist that all prices are quoted in US\$, and that invoices are also in US\$. The documents should also include a provision stating that ECDS would be "held harmless" in a patent infringement claim.

Every Purchase Order (PO), and the required attachments, should restate the terms and conditions of the contract, provide a contact name at the Eastern Caribbean Central Bank (ECCB), state the date on which the goods are due, and stipulate that all materials supplied comply with standards specified in one of the internationally recognized pharmacopeias, e.g., BP, USP, IP, etc. In addition, ECDS might consider providing suppliers with a minimum guarantee order, perhaps 30 percent of the projected annual consumption.

2. Sustainability of the System. In theory, the pooled procurement service can be sustained by the fees paid to ECDS by the participating countries. At currently estimated annual expenditure levels (EC\$600,000), ECDS must procure for the participating countries pharmaceuticals worth at least EC\$4 million. Based on the value of pharmaceuticals procured by the participating countries in the past, reaching this expenditure level will be a difficult achievement but is

<sup>9</sup>While the bid documents specified that all prices were to be quoted in US\$ and that English was to be the language on the medication and product literature, these two suppliers were permitted to bid in currencies other than US\$ and to provide products without information in English (see infra. pp.21-22).

a reasonable expectation. (See a more complete discussion in Chapter IV. Section B.)

However, in the period from July 1987 to January 1988 ECDS placed orders of only EC\$1.4 million, slightly more than EC\$230,000 per month. At this rate of procurement, ECDS will not generate enough funds to cover annual expenditures and to sustain operations. Since the pooled procurement system has achieved significant reductions in the unit prices of pharmaceuticals procured for the participating countries, ECDS has to increase the number of units procured and implement the measures noted below to fund the cost of operations.

ECDS should continue to market the value of its services among the participating countries and to encourage others to participate, e.g., British Virgin Islands, Antigua/Barbuda. ECDS should push to have the participating countries adopt a regional formulary that would contain a standard list of pharmaceuticals and eliminate the procurement of low-volume items. Finally, ECDS should assess the costs and benefits associated with procuring a limited number of medical supplies, e.g., gloves, syringes, masks, etc., that are high-volume and high-value goods.

3. Responsiveness of the system to the needs of the participating countries. Generally, the system is meeting the needs of the governments. However, some of the permanent secretaries and chief medical officers were unaware of the accomplishments of ECDS.

The objectives of ECDS need to be better understood by key decision-makers at the country level. The management of ECDS should visit these decision-makers at least biannually to provide information and solicit support. ECDS should also consider identifying an additional well-respected senior physician to serve as a volunteer adviser to and spokesman for the service.<sup>10</sup>

4. Comparison of the actual volume of purchases with the estimated volume. A preliminary, annual forecast of the volume and value of pharmaceuticals to be procured by ECDS during the first year of operation does not appear in any of the documents reviewed by the assessment team. Given the importance of this figure, it is surprising that these data were not collected or calculated by ECDS. This projection should be the baseline against which ECDS should measure performance.

Data that were available and reviewed by the assessment team consisted of the ABC analysis for the participating countries for 1985-86 and purchase orders processed by ECDS from June 1987 to December 1987.

<sup>10</sup>Dr. Henry Fraser of Barbados is already serving in this capacity. His time is limited, however. Another physician of his level of renown could be of service to the project. Since Dr. Fraser is a Barbadian, it might be useful to identify someone with ties to the region but who is not from Barbados.

This projection should be the baseline against which ECDS should measure performance.

Data that were available and reviewed by the assessment team consisted of the ABC analysis for the participating countries for 1985-86 and purchase orders processed by ECDS from June 1987 to December 1987. This information has been used by ECDS and the assessment team to obtain a rough idea of the value of pharmaceuticals ECDS needed to procure to sustain operations. However, since projections of the volume of pharmaceuticals were not prepared, it has not been possible to compare estimated volumes and actual volumes.

ABC Analysis and Purchase Orders by Country - 1987

<u>Country</u>	<u>ABC Analysis</u> <sup>11</sup> <u>1985-86/EC\$</u>	<u>Actual P.O.s</u> <u>1987/EC\$</u>	<u>P.O.s Pend</u> <u>EC\$</u>	<u>Total P.O.s</u> <u>ECDS</u>
Dominica	387,634	84,712	N/A	17
Grenada	461,599	324,712	N/A	41
Montserrat	147,753	37,796	45,372	29
St. Kitts/Nevis	417,963	133,633	N/A	18
St. Lucia	1,190,350	288,833	153,591	34
St. Vincent	1,351,603	459,062	88,250	47
Totals (EC\$)	3,956,902	1,328,748	287,213	186

The ABC Analysis is based on prices in effect before ECDS began operations and represents about 90-95 percent of the total drug procurement for the participating countries in the period 1985/86. In the period under review, ECDS processed orders totalling about EC\$1.65 million. If during the period January to June 1988 ECDS is able to process orders valued more than EC\$165,000 monthly, the total value of the pharmaceuticals procured during the first year of operations will be 65 percent of the value of the ABC analysis. Achieving this record would be an enviable accomplishment, and results should be even better in the later years of the project.

C. Quality Assurance

Trying to establish the appropriate balance between price and quality is one of the most perplexing issues in pharmaceutical procurement. In those countries where financial resources are severely limited, the level of health care is minimal, and the expectations of both consumers and providers are low; the unit price of pharmaceuticals sometimes drives procurement decisions.

<sup>11</sup>M. Goldberg, "Management Information System and Data Analysis," Management Sciences for Health, February 13, 1987. This report does not summarize or project the total value of pharmaceuticals to be purchased by ECDS.

While the countries participating in the ECDS have limited resources available to purchase pharmaceuticals and joined the pooled procurement system to secure reductions in the unit price of the items procured, the governments, health care professionals and consumers were familiar with a relatively high standard of quality for any given product. In most cases, the pharmaceuticals procured before the existence of ECDS were provided by the major, multinational pharmaceutical firms who have a generally good reputation for the quality of their products—whether merited or not—if not for the reasonableness of their prices.

Since the participating countries were familiar with a given standard of quality, ECDS has had to walk a fine line between obtaining the best price and ensuring the same standard of quality. By changing many of the products, ECDS had to be aware that prescribers and consumers might want assurances that the quality of the new products was comparable to what had been procured previously. This is not to suggest that ECDS ever intentionally sacrificed quality for price. However, the procurement records do appear to indicate that price was the primary variable used by the Tenders Subcommittee to choose one product over another. As a result of this practice, pharmaceuticals never before seen by many supplies officers have begun to appear in the participating countries. Dispensers working at the periphery of the system report that prescribers and consumers have expressed concern about the change in the medication and reported that certain products are less effective than those previously distributed. This is not to suggest that the comments are valid. It is only to note that such responses could have been anticipated and avoided.

It is ironic that concerns about the quality of products have arisen because ECDS may be the first activity in the region to take a comprehensive approach to assessing the quality of pharmaceuticals. It should also be kept in mind that products were only available for four months when the assessment took place and that the concerns expressed may be views of competitors or previous suppliers whose products are no longer in the public sector market.

To its credit, ECDS has developed the principal components of a quality assurance system. Indeed, the ECDS contract includes several clauses intended to prevent suppliers from shipping sub-standard products or products nearing expiration. For example, each purchase contract stipulates that drugs must have two (2) years expiry date or three-quarters (3/4) of their normal shelf life on arrival in the purchasing country. In addition, ECDS has established a policy requiring the testing at the Caribbean Regional Drug Testing Laboratory in Jamaica of all new drugs entering the region.

However, there are indications that the application of the quality assurance system is less than uniform. For example, it is not

clear from a review of the purchase records that pharmaceuticals are withheld from distribution until reports from the testing laboratory show that the product is of acceptable quality. In addition, several products supplied in October 1987 have manufacturing dates in 1985 and do not show the date of expiry.

While conducting the interim assessment, the team observed many areas of concern. The examples cited were observed at either ECDS or in one of the participating countries.<sup>12</sup> ECDS is aware of these issues and has taken steps to address each.

There are no logs to maintain a record of product defects or prescriber and/or consumer complaints.

Files on supplier performance are not maintained, although poor performance is tracked "mentally" by the staff at both the central level and in certain of the participating countries.

While there are records of sending products to the Regional Drug Testing Laboratory in Jamaica, there are no procedures in place to dispose of products that fail quality control tests. At certain storage facilities in the region, power outages occur on a regular basis, once or twice a week. Since there are usually no back-up generators, medication that requires refrigeration might be losing potency.

Some medication that has arrived in the medical stores is close to date of expiry and not in compliance with the ECDS contract. For example, chlorpheniramine maleate tablets, 4 mg, batch No. 197055 manufactured by Pharbita in 1985 and scheduled to expire in October 1988, arrived in St. Vincent in December 1987.

There are reports from consumers that some of the pharmaceuticals supplied by ECDS do not work as expected, or in a manner similar to the products previously available in the region. For example, Ampicillin in suspension, manufactured by Germed of East Germany and supplied by IMPAS, reportedly does not dissolve properly.

Certain products that were procured through ECDS and are currently in warehouses throughout the region either contain no product information, or provide information in a language other than English. In addition, some products do not designate the manufacturer or indicate the country of origin. For example,

<sup>12</sup>These examples are not presented to embarrass or criticize the practices of ECDS or of any of the participating countries. The conditions noted are representative of a situation that is common to pharmaceutical supply services, especially one that is in its infancy. The examples have been chosen to emphasize the fact that ECDS and the countries must work together to tighten the definition and application of the quality assurance system.

chloramphenicol capsules, 250 mg (x 1,000), that were supplied by ECHO of the United Kingdom, contain a batch number (No. 561086), but no reference to the manufacturer or country of origin. The container appears to have been manufactured in India. Furosemide 1 percent, manufactured by Paris Chemical and supplied by IMPAS, arrived without product literature; and hydrochlorothiazide, 25 mg. batch No. 87902 manufactured by NV Pharmachemic Pharmaceutical S.A., informs the recipient "a conserver en frais, a l'abri de la lumiere et de l'humidite."

Since the application of an effective quality assurance system can give those in the participating countries some guarantee that the products obtained are reliable, safe, and effective ECDS should be certain that the system defined is comprehensive and rigorously implemented, and that reports on the system are routinely prepared and distributed. At a minimum, ECDS and the participating countries should address the concerns noted above by ensuring that the quality assurance system includes:

- well-defined quality standards based on specified and internationally recognized pharmacopeias (BP, USP, IP) and Good Manufacturing Practices (GMPs);
- regular reports on quality control tests prepared biannually and presenting the test results compiled by the Regional Drug Testing Laboratory in Jamaica;
- specified testing methods and procedures for dealing with batches that fail tests;
- a detailed sampling plan based on agreed statistical and qualitative criteria; and
- well-established procedures for selecting new suppliers that include stipulations on "freshness," minimum expiry period, country of origin and use, bioavailability of certain products, and stability.

#### D. Conclusions and Recommendations

Assessment of the procurement practices implemented in the period under review suggests that the project is having a positive impact on the pharmaceutical supply systems of the participating countries. In general, the system implemented by ECDS is working well.

Still, there are areas of concern. While obtaining pharmaceuticals at reduced prices is a central objective of the RPMP, the Tenders Subcommittee should weigh the advantages obtained by achieving reductions in unit prices against issues of product quality, supplier reputation, and prescriber and consumer expectations and experiences. The Tenders Subcommittee should ask the Policy Board and Formulary Subcommittee to provide clear

guidelines for future procurements. These should show the types of suppliers/manufacturers invited to bid, as well as the countries allowed to supply pharmaceuticals. While implementing procedures based on these guidelines the Tenders Subcommittee should pay close attention to issues of product quality.

Since the success of the procurement system will be measured as the degree to which the system meets the needs of the governments of the participating countries, ECDS should maintain close contact with the supplies officers of the participating countries. Those working at the periphery of the system should be encouraged by ECDS to provide pertinent information on drug products, e.g., date of receipt, quantity, condition of receipt, prescriber/consumer comments, etc. ECDS should ensure that the reports are acknowledged, and should act upon the information provided.

#### IV. Financial Analysis of the Operations of ECDS

##### A. The Financial Information Systems of ECDS

The financial system established for approving vouchers, forecasting project expenditures, and tracking project costs appear to be adequate. In general, the system seems to have adequate checks and balances. In addition, it provides information sufficient to monitor expenditures.

The following procedures are in place:

1. A voucher is prepared by the Accountant for each payment and submitted for authorization, along with supporting bills and statements, to the Associate Director or the Assistant Director. Once authorization is received, checks, that must have two signatories, are issued and signed. Vouchers that require an acknowledgement of payment are filed sequentially.
2. A Current Account is maintained by the Accountant. In addition, there is a special account for pension and gratuity payments.
3. The Accountant also maintains a General Journal and a General Ledger. The Journal records all transactions in chronological order. Transactions are posted from the Journal to the Ledger and classified according to category.
4. The Petty Cash Account is kept by a clerk-typist who reports to the Accountant. This account has a float of \$800.00 and operates on a reimbursement basis.
5. The Monthly Disbursement Report/Monthly Expense Statement, prepared by the Accountant, is the basis for drawing funds from USAID. This report, submitted to USAID each month, summarizes ECDS expenditures for the previous month of operations and projects expenditures for the next three months.

While the general procedures are adequate, there are some indications that financial documentation was not prepared on a timely basis. For example, on one occasion, the monthly disbursement report/monthly expense statement was not prepared and sent to USAID for more than three months. Since the project bank account had funds sufficient to cover the expenditures, delay in submitting the financial documentation did not create a cash flow problem for ECDS.

##### B. Estimate of "Savings" Realized by the Participating Countries Who Use the Pooled Pharmaceutical Procurement System

ECDS has compared the historic drug purchase prices paid for 59 items by the participating countries with the prices obtained for the same items during the first tender cycle. This analysis suggests that potential "savings" ranged from 14.11 percent (Montserrat) to 63.6 percent (St. Lucia); the average for all countries was 44.38 percent. (See Table 1 of Appendix D.)

While ECDS tends to speak of the "savings" each country has realized by using the pooled procurement system, it would be more appropriate for ECDS to emphasize the extent to which participation in the project has enabled the countries to increase the purchasing power of their drug budgets. Since pooled procurement has achieved lower unit prices, each country has been able to purchase more necessary items for a given budget amount.

It is important for ECDS to emphasize the manner in which participation increased purchasing power rather than "saves" limited resources. In the face of increasing demands for all social services and population growth (about 2.3 percent annually), governments in the region are attempting to reduce public sector expenditures. If ECDS reports that governments have "saved" funds rather than delivered more items for a fixed amount,<sup>13</sup> the project runs the risk of having governments reduce drug budgets. If such a budget reduction were to take place while population growth continued, the level of coverage could be reduced. In addition, the financial viability of ECDS could be jeopardized because its self-sufficiency depends on generating procurement fees sufficient to cover operations.

ECDS should emphasize that increasing the purchasing power of drug budgets depends on the volume of purchases and the composition of the orders processed. While the value of purchases was estimated at EC\$1.2 million, the actual value of purchases made by ECDS during the first seven months of the first tender cycle exceeded EC\$1.4 million. A product by product breakdown would need to be undertaken to determine the level of cost reduction. However, the extent to which purchasing power has been increased is likely to be significant.

The potential for increasing the purchasing power of drug budgets further and retaining first cycle price levels in the second and subsequent tenders will be influenced by several factors. Critical among these is the extent to which quantities actually taken up by the participating countries match tender contracts based on projections made by ECDS. Orders have to date fallen well below projections. This could influence supplier confidence adversely and lead to price increases in the next tender cycle.<sup>14</sup>

Other factors include the reliability of the payments/replenishment system, trends in the suppliers' cost of production and distribution (rising or stable), and changes in rates of currency exchange. Given the strengthening of European currencies with respect to the US dollar, some European suppliers may chose not to submit bids in the second tender cycle. While the withdrawal of some European suppliers may make American

<sup>13</sup>In at least two of the participating countries (Dominica and St. Lucia) health officials informed the assessment team that reductions in the drug budget were under consideration.

<sup>14</sup>In fact, Collins of Barbados, a supplier to ECDS, has hinted that if the rate at which orders are taken up does not improve during the second tender cycle, he would not tender during the third cycle.

products more competitive, it is unlikely that the percentage reductions in unit prices achieved during the first tender cycles will be as large during the second and subsequent tender cycles.

ECDS and the participating countries have the ability to influence the efficiency and reliability of the procurement and payment/replenishment system. The other factors, however, are external to ECDS and likely to be significant determinants of tender prices. While it is not possible to predict with certainty trends in demand and prices for drugs, it is reasonable to assume that both demand and unit price will move up rather than down, particularly in the medium to long run.

In any event, acting in concert should allow the participating countries to obtain more advantageous reductions in unit prices than would be available to any individual country. This is the rationale behind the RPMP and underlines the importance of emphasizing the price advantages and budget "stretching" achieved through pooled procurement rather than the "savings" achieved on the price of drugs.

### C. Financial Viability of the Eastern Caribbean Drug Service

A fundamental objective of the RPMP is for ECDS to be self-sustaining by August 1990. The funds needed to cover operations are to come from the 15 percent administrative fee levied on drug purchases processed for the participating countries. To determine the potential for achieving this objective, the Assessment Team, with the assistance of ECDS/MSH staff, has examined the volume of purchase orders and revenues, and the cost of operations, based on experience, to date (January 1988).

The cost of operations for ECDS for the period July 86-June 87 is EC\$371,394, an amount well below the estimate made in the Project Paper (EC\$768,846). In the near future, costs are expected to reach about EC \$611,000. This estimate assumes no change in current staff levels but provides for increased activity and travel by ECDS staff and depreciation allowances.

Appendix E analyzes the recurrent annual operating costs for ECDS under three separate scenarios, and calculates the annual EC\$ amount of procurements required to cover these costs. For example, Analysis #3, which calls for adding a mid-level staff member, estimates that annual operating costs would be EC\$646,085, and that annual procurements would have to be EC\$4,307,230 for the project to break even.

Since countries have not bought as much as anticipated because many made large purchases before the new system went into effect, it appears reasonable for ECDS to concentrate on containing the costs of operation. In this respect, Analysis #2 of Appendix E appears to be the sensible strategy to follow in the near to medium term (two to three years). This analysis suggests that ECDS must procure drugs worth EC\$4,077,646 to cover operations. This figure represents 81.5 percent of the combined drug expenditures of the participating countries, and implies that just under EC\$4.7 million or 93 percent of country drug expenditures would need to be

earmarked for the ECDS (in order to take care of the 15 percent administration fee).

An examination of the project's performance during the first tender cycle provides some indication of the ability of ECDS to meet the targets. Since the ECDS is only midway through the first tender cycle, the full impact cannot be determined. However, preliminary data suggest that if current trends continue, orders placed through ECDS will not have equalled projections by the end of the contract period, i.e., the end of the first tender cycle. It was anticipated that EC\$4,992,000 worth of drugs would have been procured by ECDS during the first tender cycle. For the first seven months, however, orders processed through ECDS are valued at EC\$1,480,000. (See Table 2 of Appendix D.) This represents an achievement rate of 51 percent.<sup>15</sup>

A review of the volume and value of purchases generated gives a preliminary indication of the financial viability of ECDS. From the orders processed during the first seven months, ECDS expects to receive EC\$222,000. This figure compares favorably with the Project Paper estimate of EC\$129,600. In terms of collections, however, ECDS had only EC\$79,163 on account at ECCB at the end of December 1987 (the sixth month of the tender cycle). The revenue collected is much less than that amount receivable because the administrative fee is not paid until after the orders have been received by countries and the supplier has been paid. (See Table 3 of Appendix D.)

If ECDS maintains the current level of orders (i.e., an average monthly order of EC\$211,428) throughout the remainder of the first tender cycle, ECDS should earn only 62 percent of the amount needed to break even, i.e., to cover operating expenses. The long-term viability of ECDS will depend on the project's ability to attract and manage an increasing annual amount of OECS drug expenditures; this figure must reach an annual value of at least EC\$4.7 million by 1990. This target is achievable if ECDS and the ministries of health resolve current forecasting problems, participating countries stay committed to pooled procurement, additional countries join the system, and the payment/replenishment system functions more effectively.

#### D. Description and Status of Operations of the Drug Reimbursement System

The reimbursement system has been working reasonably well. As outlined in the Project Paper, the Eastern Caribbean Central Bank (ECCB) has been making prompt payments to suppliers. Three of the six participating countries have responded enthusiastically by replenishing their drug accounts on the strength of suppliers' invoices and before reimbursement claims from the ECCB.

<sup>15</sup> Achievement rate is calculated as follows: total value of items tendered through ECDS are prorated over a seven-month period. Actual commitments are taken as a percentage of this.

In two countries reimbursements have been delayed because of initial delays in receiving ECCB reimbursement notices and in-country communications problems. One country made an initial payment. The other had not made any payments at the time of the visit by the Assessment Team but reported that payment claims were being processed by the Treasury. No reimbursements had been made to the ECCB by a third country. Since the Ministry of Health and the Ministry of Finance of this country disagree on the benefits of the project and the manner of participation, it is unlikely that payment will be forwarded to ECCB until the issues are resolved.

Table 4 of Appendix D presents the dates that reimbursement claims were submitted to specific participating countries and the dates that payments were received by the bank. It should be noted that reimbursement claims are routinely preceded by debit advice. ECCB routinely:

- pays suppliers and sends a debit advice in triplicate. (One copy is sent to the Ministry of Health of the participating country, a second goes to the Ministry of Finance, and a third goes to ECDS.)
- sends monthly reimbursement notices to the Ministry of Finance of the participating country with copies to the Ministry of Health and the ECDS.
- sends monthly statement of account to the Ministry of Finance, Ministry of Health, and ECDS.

These arrangements are acceptable to those participating countries who reimburse either on the strength of suppliers' invoices or receipt of the debt advice from ECCB. In three of the participating countries, there have been problems with reimbursement. For example, the Ministry of Health in one country required an original reimbursement claim to process payment. During the visit of the Assessment Team, the Ministry of Finance agreed to pass the originals to the Ministry of Health. This gesture of cooperation should pave the way for that country to replenish its account.

ECDS must keep in mind that the initial deposits in the drug accounts range from US\$50,000.00 (Montserrat) to US\$350,000.00 (St. Lucia and St. Vincent). If large, individual orders are placed by the participating countries, the accounts may run into deficit. Apart from those noted below, individual orders have generally been small.<sup>16</sup>

<sup>16</sup>The only supplier interviewed by the Assessment Team indicated a preference for larger, less frequent orders since these would be "less costly to process and ship." At the moment, too many "emergency" orders are being placed. Approximately 20 percent of all orders placed with ECDS have been for less than EC\$1,000, and 60 percent of the orders are for less than EC\$5,000 CIF. Since suppliers spend up to EC\$300 to ship the pharmaceuticals by air, small orders discourage suppliers from participating in the system.

<u>Country</u>	<u>Amount of Order (US\$)</u>
St. Vincent	117,207
St. Lucia	90,730
Grenada	41,208
St. Kitts	30,031

In light of the apparent departure from the procedures outlined in the initial country letters of authorization to ECCB and the Project Paper, an observation needs to be made about the statements of accounts for the participating countries. According to the procedures noted above, ECDS was to send copies of purchase orders and inform ECCB when purchase orders were placed. To date, ECDS has not been sending the relevant information on commitments to ECCB. Rather it has been developing purchase order commitment statements. Therefore, ECCB statements of account reflect balances after debits and credits have been made, but give no indication of the uncommitted balances.

Since orders are sometimes cancelled, ECDS may be better placed than ECCB to adjust the statements of account for the participating countries. Moreover, ECCB sends copies of debits and credits to the ECDS, thus simplifying the preparation of these statements.

Table 5 of Appendix D provides a summary of purchase order commitments compiled from individual country statements through January 1988. The data show that three countries had positive balances while three were in deficit. The deficit in one country, the largest user of the system, accounting for 31 percent of purchases made through the ECDS to date, is relatively large because ECDS's tracking system was not established in the initial stages of the RPMP.<sup>17</sup>

#### E. Conclusions and Recommendations

Given the experience of ECDS to date, the volume of purchases committed through the pooled procurement system is likely to fall below tender estimates by the end of the current contract period. It is, therefore, critical for ECDS to work towards securing a larger volume of procurements in the second and later tender cycles. This action is required to ensure that suppliers and the governments of the participating countries develop and retain confidence in the value of the system, and that ECDS secures revenues sufficient to cover operating expenses.

ECDS has thought of consolidating smaller orders. While this approach is desirable in the long-term, caution should be exercised until there is greater confidence in the system for projecting pharmaceutical needs, and more routine ordering has taken place.

<sup>17</sup>As at February 1988, ECDS had halted the processing of orders on behalf of the three deficit countries.

1. To increase confidence in the pooled procurement system and the capability of ECDS, project staff should work with the participating countries to improve estimation techniques. Improved projections should achieve closer adherence between tender estimates and purchase orders. In addition, ECDS should begin to emphasize the extent to which pooled procurement enhances the purchasing power of drug budgets by achieving reductions on unit prices and allowing participating countries to purchase more necessary items for a fixed amount.
2. Since the viability of ECDS is based on the project's ability to collect procurement fees sufficient to cover operating expenses, ECDS should seek to widen the number of countries participating in the pooled procurement system, e.g., BVI. In addition, ECDS should study the advantages and drawbacks of adding a limited number of medical supplies to the procurement system, e.g, gloves, syringes. It is suggested, however, that ECDS should gain at least three years experience with pharmaceutical procurement before adding medical supplies to the system.
3. ECDS and participating country financial reports should be generated in a more timely manner. Preparation of the following reports will allow ECDS to monitor procurement activities and to assess revenue potential:
  - value of orders estimated through the ECDS tender cycle by country and by type of pharmaceutical
  - value of orders committed by country by month
  - administrative fees by country and by month

In addition, ECDS should continue to monitor closely the payment/replenishment system and should encourage the participating countries to replenish their accounts promptly and fully.

Some of the participating countries produce a purchase order commitment statement. Since this is a useful management tool, ECDS should encourage all countries to develop this practice as part of an effort to track orders, balances, and credits.
4. ECDS should ask those participating countries who have experienced delays in reimbursing the ECCB to review internal financial procedures and to take steps to process invoices and debit advices more rapidly.
5. ECDS has in place and manages competently manual and computerized systems that forecast expenditures and track project costs. However, ECDS should ensure that data are entered in a more timely manner.
6. Finally, ECDS should initiate a study to define the "optimum" order size for each participating country. This study would determine the value and composition of the order and the lead time for delivery and receipt. The results of this study should enable both ECDS and the

individual countries to obtain a clearer idea of what should be ordered and when. As the pooled procurement system becomes more routine, it may become more efficient, more highly valued, and more financially viable.

## V. Status of Project Implementation at Central and Country Levels

As specified in the TOR, the assessment team examined selected project activities to determine the likelihood that current operations will achieve project objectives. Effective implementation of the activities selected has a direct effect on the viability of the pooled procurement system. The following activities were reviewed:

- the structure and application of management information systems (MIS) at the regional and country level,
- the development and promulgation of regional and country-specific formularies,
- the progress to date in upgrading the central medical stores of the participating countries,
- the drug distribution network, from the central medical store to the periphery of the health care delivery system,
- the private sector attitudes and practices on participation in the pooled pharmaceutical procurement system, and
- the attitudes and practices in the region pertinent to recovering the cost of pharmaceuticals.

### A. The Structure and Application of the Management Information Systems

ECDS is fully aware that improvements in the pharmaceutical procurement, storage and distribution practices of the participating countries can only take place if both the regional and country staff have access to and use accurate and readily-available information. Based on a review of the information systems in place before ECDS initiated operations, it is clear that almost all the countries (Dominica is the exception) were using manual systems incapable of forecasting needs. These same systems could only imperfectly monitor the receipt, storage, and distribution of the pharmaceuticals procured.

The technical assistance team working with ECDS has made a major effort to improve the information systems.<sup>18</sup> Given the poor record-keeping practices employed in most of the participating countries before ECDS was established, it was difficult to assemble a reliable database on which to base procurement forecasts and to monitor operations. ECDS has attempted to change the manual practices traditionally in place by introducing computer-assisted programs that use simple, specially-designed spreadsheets based on Lotus 1-2-3. Staff of the central medical stores of the participating countries have been trained in the use of these tools,

<sup>18</sup>According to a letter of October 4, 1988, the project has purchased 13 computers, produced 7 reference manuals, and provided 7.4 months of technical assistance in MIS.

and there are expectations that forecasting and monitoring practices will improve in the short term.

B. The Development and Promulgation of Regional and Country-specific Formularies

Defined as a simple list of pharmaceuticals or a more detailed manual containing protocols on prescribing pharmaceuticals, a formulary is a vital tool for achieving a systematic and efficient use of drugs. Since a formulary generally lists those pharmaceuticals that have been approved for use in a given jurisdiction, its development, promotion, and use have a direct effect on procurement and treatment. A formulary can be an effective means of containing costs and rationalizing prescribing practices.

Each of the participating countries has expressed interest in developing an individual country formulary, as well as a regional formulary.<sup>19</sup> Some of the countries have already produced formularies, e.g., St. Lucia,<sup>19</sup> and most have formulary committees. In addition, there is an ECDS Formulary Committee, consisting of representatives from each participating country, that is charged with developing a list of "core drugs" for procurement through ECDS and for use throughout the region.

While progress has been made in the development of country-specific and regional formularies, the Assessment Team noted that certain "irrational" prescribing practices continue to flourish. In some cases, physicians feel a need to prescribe, although a pharmaceutical is not required; in other cases, a prescriber will have a preference for an item that is not commonly selected within that country. In addition, the Assessment Team found some formulary committees reluctant to commit to develop a document if compliance could not be assured.

C. Progress to Date in Upgrading the Central Medical Stores of the Participating Countries

Except for the Central Medical Stores (CMS) on St. Vincent and the Grenadines, the RPMP has had a positive effect on the appearance of the storage facilities and on the quality of warehousing practices among the participating countries. In four of the six countries, the computers and training provided by the RPMP have significantly improved the operation of the CMS and the distribution system overall.

The assessment team found the following conditions in place at the CMS of the countries participating in the RPMP:

Dominica. The facility housing the CMS is less than five years old and well maintained. The storage system is being revised, although existing

<sup>19</sup>The current St. Lucia Formulary lists 400 to 500 drug products. A new formulary is being developed which will contain protocols for prescribing and will be designed for use in conjunction with the ECDS formulary.

practices are well designed and closely followed. Records were selected at random, reviewed, and found to be accurate and up-to-date. The computer is routinely and appropriately used.

Grenada. The facility under construction appears to be well-suited to the country's current and future needs. Warehousing practices and computerized control systems in effect are well executed. The records selected and reviewed were found to be accurate and up-to-date.

Montserrat. The facility is ideal and well-maintained. However, the usage records are five months out-of-date. Information has not been entered routinely in the database.

St. Kitts. The facility is small but well organized. The computer system is routinely and accurately used by CMS staff and the records are up-to-date.

St. Lucia. The facility is newly renovated and very well maintained. Storage practices, record-keeping and computer utilization appear to be excellent.

St. Vincent and the Grenadines. The facility is very small, entirely inadequate to meet the needs of the country and in very poor condition. There is evidence of vermin and insect infestation in the building. Pharmaceuticals are not well organized, although efforts have been made to implement systematic storage and shipping practices in one section of the warehouse. Records are not well maintained.

D. The Drug Distribution Network from Port Clearance to the Periphery of the Health Care Delivery System

The reduction achieved in the time required to clear pharmaceuticals from the port has been universally acknowledged as a significant accomplishment of the RPMP. Clearance time has been reduced from as many as eight weeks to as few as five working days. Prior to the RPMP and the establishment of the ECDS, invoices were sent to the Central Bank; drugs could only be cleared from the port and transported to the CMS upon presentation of sight drafts. Since payment is now guaranteed by ECCB, the supplies officer can clear the shipment as soon as he receives notification that the goods have arrived in country.

Distribution from the CMS to the principal hospital in each country is generally handled expeditiously. In most cases, the CMS is close to the general hospital which is the largest user of pharmaceuticals in each country. The CMS is highly responsive to the directives and requests of the general hospital. Except for St. Vincent and the Grenadines, the pharmacies of each general hospital are well stocked and orderly. If an item is out of stock in the pharmacy, it is probably not available at the CMS. The work of the RPMP in improving the practices of the CMS is also evident, although to a lesser degree, in the pharmacies of the general hospitals.

Beyond the general hospital, the application and use of the system of forecasting, ordering, receiving, storing, and prescribing developed by ECDS varies by country and by the distance between the pharmacy and the CMS. In general, as the distance between the pharmacy and the CMS increases, the efficiency of the system declines. Pharmacists working in the more remote health posts have received less training from ECDS staff and remember keenly the problems associated with previous procurement and distribution practices. This group has relatively little information on the advantages and operations of the pooled procurement system, and continues to forecast pharmaceutical needs without a thoughtful review of prescription trends. Given that the staff of the RPMP have focused initially on training the staff of the CMS of each country, this finding is expected.

E. Private Sector Attitudes and Practices on Participation in the Pooled Procurement System

ECDS has not had time to collect information on the attitudes and practices of private sector pharmacies regarding participation in the pooled procurement system. ECDS has focused its attention and energy on establishing and operating a cost-effective drug procurement system for the participating countries. By concentrating on improving the public sector systems ECDS has sought to prove that a regional procurement system can work. Given the unfortunate, earlier experience with regional cooperation in drug procurement, ECDS has chosen the proper course.

The owners and operators of the private sector pharmacies are watching the operations of ECDS closely. Most remember the previous experiment with a regional pharmaceutical management system, i.e., CARICOM, and are skeptical that any pooled procurement system will work. However, all are interested in having more information on ECDS. A number of private pharmacies report that before the establishment of ECDS, patients, particularly in the cities, traditionally bought drugs in the private pharmacies. In some countries, up to 80 percent of the clients came from the public health service, because the public pharmacies were out of stock, not open or easily accessible when needed, or because purchased drugs were perceived to be of higher quality. Some of the private pharmacists acknowledge that shortages are less frequent in some countries as a result of ECDS and that their business has changed. For example, one pharmacist reported that he had reduced significantly his annual order for pharmaceuticals. He reported that his customers were recently able to find the drugs at government pharmacies and no longer needed to buy them at his pharmacy.

F. Attitudes and Practices in the Region Pertinent to Recovering the Cost of Pharmaceuticals

The issue of recovering costs for medical products and services is not new to the region. Most of the participating countries have laws and systems designed to generate revenues to offset the expenses of health care. The countries in the region have user fees for some services, e.g., x-rays, diagnostic tests, etc., and contributions from the social security system. In addition, some countries have established minimum charges for

prescriptions. However, the categories of persons exempt from paying the charge generally include the principal consumers of drugs.<sup>20</sup> Even if collection was rigidly enforced, it is unlikely that the amount obtained would be significant, and it is highly likely that the cost of collection would exceed the amount collected.

At all levels of government service there is wide recognition in the region that some measures should be implemented to recover a percentage of the cost of pharmaceuticals. There is, however, a range of opinion on the percentage that should be recovered and the most appropriate method to employ. Some favor collecting levies on salaries and earmarking the funds to procure drugs and medical supplies. Others argue that this indirect approach will not reduce expenses, minimize hoarding, and increase compliance. This group urges the establishment and collection of modest charge for drugs. Those serving at the highest levels of government regard cost recovery as a delicate policy issue that must be addressed at the political level. This same group of political figures and civil servants believes that ECDS should make more efficient use of the drug budgets available rather than participating in the policy dialogue on cost recovery.

#### G. Conclusions and Recommendations

On the whole, the RPMP has had a positive effect on the ordering, receipt, storage, and distribution of pharmaceuticals among the participating countries. While each country is aware of the important role that formularies play in drug management, it is too soon to assess the project's role in the development, dissemination, and use of this important tool. The RPMP has made very limited efforts to involve the private sector and to overcome traditional, regional resistance to developing and implementing user fees for pharmaceuticals. The project's limited efforts in addressing these issues are wholly understandable. What the project can and should do relative to involving the private sector and recovering costs from users are unresolved and problematic issues.

Management Information Systems. While the design of the information systems in place appear appropriate, use of the systems by staff of the CMS of the participating countries is irregular. In some countries, data on purchase orders, goods received and distributed, etc., are entered routinely. In other countries, data have not been entered on a regular basis for several months. If used properly and routinely, the systems will provide the information needed to adjudicate tenders, and to place and track purchase orders. ECDS is aware of the need to continue to train

<sup>20</sup>In one country, for example, the following categories of persons are exempt from paying the EC\$5.00 prescription charge: persons over 60, persons under 16, nurses, policemen, firemen, and known "paupers." The exemption pattern found in this country is fairly common in the region.

and to motivate the staff of the medical stores on the advantages and proper use of the systems.<sup>21</sup>

Besides improving the use of the existing information systems, ECDS should consider developing a new system for monitoring vendor performance. This system would be used at the central level and present a global portrait of orders processed and the status of each order.<sup>22</sup> The information generated would include the value of each order, destination, and the supplier. This system would allow ECDS to compare the level of activity among the participating countries. Reports like those presented in Appendix C could be regularly produced by ECDS and shared with permanent secretaries of the ministries of health and medical supplies officers. This would allow the participating countries to monitor procurement activity and make the adjustments necessary to achieve the desired economies of scale.

Formulary. The development and dissemination of a regional formulary and the development or revision of country-specific formularies are primary tasks for the RPMP in the current year's work plan. Since a formulary can be very useful in systematizing drug prescription and use, emphasizing formulary development is a proper focus for the RPMP.

However, in the context of developing this important tool, project staff must keep three issues in mind. First, member countries should be allowed and encouraged to develop country-specific formularies. Intersectoral meetings should take place in each country at which such issues as the development of the formulary and its impact on prescribing practices should be discussed to the fullest extent possible. Second, ECDS should develop a regional formulary that lists "core" drugs for the regional members, contains information needed by prescribers and pharmacists, and takes into account the country-specific formularies. Finally, producing the formulary will not ensure prescriber compliance. Methods must be developed to promote the use of the regional and country-specific formularies by physicians and other health care professionals.

Central Medical Stores. The CMS of all six participating countries have benefitted from the assistance provided through the RPMP. Except for one country, some of the most visible results of the RPMP to date can be found in the generally efficient operations of the CMS of each country. However, the CMSs were visited by the assessment team shortly after the departure of the long-term technicians. It is clear that the advisers

<sup>21</sup>The Fifth and Sixth Quarterly Reports of the RPMP note that "accurate forecasting and good inventory control need to be a higher priority for almost all of the Medical Supplies Officers. In the future, Supplies Officers will need to assume more responsibility for providing ECDS with accurate forecast data and for ordering in a timely manner to avoid stockouts and emergency orders."

<sup>22</sup>These systems would contain all reports related to the purchase orders, e.g., certificates of analysis, invoices, shipping documents, order acknowledgement information, telex/letter/note references.

were in the most part highly valued by the management and staff of the CMS. It is also apparent that the advisers were able to enhance the skills of the national staff and to help establish new, or improve existing, logistical systems. With one or two exceptions (Dominica and Grenada), however, it is less evident that the systems established will continue to function at the same level of proficiency without the continued presence of the advisers. Indeed, there are some indications that systems have not been maintained since the advisers left the region.

The staff of ECDS should visit each CMS on a routine basis to review the operational status of the MIS. Where there are indications that management and staff are not maintaining or continuing to implement the systems appropriately, short-term assistance should be promptly provided.

Drug Distribution System. Port clearance practices and the operations of the central medical stores and the pharmacies of the general hospitals have improved as a result of the project. The RPMP has only just begun to improve the pharmaceutical forecasting, storage, distribution, and use practices at the periphery of the drug distribution system of each country. It was not possible for the team to evaluate systematically the pharmacy information systems or the patterns of vehicle use in distributing pharmaceuticals.

Only Dominica and Grenada, countries that received assistance in pharmaceutical procurement and distribution prior to the establishment of the RPMP, have developed some systems to monitor drug ordering and use practices at the periphery of the system. The system in place in Dominica, which uses a portable computer to carry out ABC analyses and assigns an individual budget to each health post, should be studied closely. There may be elements within this system that can be modified and replicated elsewhere in the region.

Private Sector Attitudes and Practices on Participation in the ECDS. ECDS can be self-sufficient without involving the private sector. In addition, since the private pharmacies will be less understanding of delays in delivery and errors in shipment than the public sector, ECDS should make certain that the regional pharmaceutical system is well established and offers services and products of quality before inviting the private sector to participate.

While proving the validity of the pooled procurement concept, ECDS should not ignore the private sector. ECDS should keep the private sector informed through newsletters and invitations to attend conferences and workshops. Involving private sector pharmacists requires careful study. While there is expressed interest in participating on the part of some pharmacists, ECDS might want to assemble a task force to review the legal, financial, and logistical issues before expanding the procurement system to include private sector pharmacists.

Cost recovery. ECDS is a procurement service accountable for using public revenues to purchase pharmaceuticals in a cost-effective manner. ECDS should not participate directly in the policy dialogue related to cost recovery for pharmaceuticals. ECDS can, however, provide important data

on such matters as trends in drug budgets and prescription and use patterns. Since ECDS does not operate at the policy level, management and staff should focus on establishing the pooled procurement system and leave the discussion on cost recovery to the governments of the member countries and to donors interested and capable of influencing policy in the region.

## VI. Assessment of Project Performance through December 1987

To assess the appropriateness of the RPMP's overall design, the team reviewed the following:

- the project rationale and design,
- the adequacy of project funding, and
- the quality and impact of the long- and short-term technical assistance.

### A. Project Rationale and Design

The rationale for establishing a regional system to improve pharmaceutical supply services and reduce the unit cost of pharmaceuticals remains valid. The efficiencies achieved through pooled procurement and improved supply management practices should help control costs in times of fiscal constraints, ensure that the population has access to essential drugs, and lead to improvements in health status.

A review of the objectives, activities, and time frame of the project suggests that the project design was overly ambitious. At the time of the interim assessment, several activities were proceeding well. For example, port clearance times have been significantly shortened. Unit costs for pharmaceuticals have been reduced.

However, effective supply management practices are sustained through the participation of personnel at all levels of the health system and through the commitment and involvement of key individuals in the political system. This degree of commitment and support does not appear to be in place at all levels of the health systems of the participating countries. Achieving total compliance will take more time and may not be possible.

Adequate forecasting, in particular, is necessary to make the centralized pharmaceutical tendering effective. Information needs to be maintained at each health center and hospital to estimate consumption accurately. In most of the participating countries, the pooled procurement system is not well understood and endorsed by the entire health system, nor is it operating at maximum efficiency. Since a considerable amount of time is required to engender support and to achieve efficient operations, these findings are not surprising.

In addition to having reservations concerning the project's estimate of the effort and time required to institutionalize reforms in pharmaceutical supply management, the assessment team believes that it might have been unduly optimistic to assume that the project could directly influence regional policy on cost recovery and that ECDS could achieve financial self-sufficiency before the project completion date. The project design calls for the initiation of cost recovery mechanisms to decrease public sector outlays. To some degree, there is some precedent in the region for charging fees for prescriptions. At present, however, the fees collected bring in very limited revenue and are not routinely enforced. In those countries where fees are levied, the major consumers of drugs are exempt:

countries where fees are levied, the major consumers of drugs are exempt: hypertensives, diabetics, children under 16/18, patients over 60/70, the indigent, and government employees.

While virtually all health professionals interviewed agreed that fees should be introduced in the public sector even on a nominal basis; none felt that it was politically feasible to introduce user fees in the near term. The participating countries have long-standing policies of free health care services; the public expects free drugs.

Attempts to introduce fees have not yet been successful. Dominica developed but never introduced a user fee plan. Grenada has pending legislation that recommends charging fees for drugs and other health services. St. Lucia is assessing the prospects of introducing fees at Victoria Hospital. In the short-term, the prospects of introducing cost-recovery mechanisms do not appear good. Still, since the need to charge fees will become more compelling over time, efforts should continue to promote the development and introduction of some user charges for drugs.

#### B. Adequacy of Project Funding

Project funding appears adequate in the MSH contract. Estimated expenditures as of December 1987 total \$1,261,971.31, with \$1,266,789.69 remaining. The rate of expenditures generally reflects the original design with one exception. The line item budget for participating country equipment needs to be examined, planned, and probably partially reprogrammed as only \$90,180.62 has been expended out of the LOP amount of \$401,600. While some renovation and equipment will still be needed (e.g., renovation in St. Vincent's and shelving in Dominica), the assessment team does not recommend that ECDS purchase compounding equipment as originally contemplated.

A portion of the funds available may need to be shifted to the consultant line item, since the budgeted amount will probably be inadequate to meet the short-term technical assistance needs for the remaining LOP. While it is difficult to predict with certainty the rate at which progress will occur over the next two and one-half years, it is highly probable that USAID assistance will be required after August 1990, the current completion date. This assistance will be needed to help defray a portion of ECDS costs (such as regular meetings of the Policy and Technical Committees) and to cover the cost of the limited technical assistance needed to strengthen country capacity for one to years beyond the current project completion date.

#### C. Quality and Impact of Long- and Short-term Technical Assistance

As of December 1987, over nine years of long- and short-term technical assistance had been provided under the RPMP. The assessment team was not able to review adequately the quality and impact of the services provided by the long-term advisors because only one of the original four long-term advisors who had worked with the project was still resident and available to be interviewed. ECDS and participating country staff, however,

The assessment team reviewed the country reports and other selected documents prepared by the technical assistance advisors. Most of the material failed to describe adequately the constraints, problems, and complexities of the country programs. In addition, the assessment team found that the staff of the participating countries had not participated in the writing or review of the material. Without the active involvement of country staff in the preparation of country reports it is difficult to develop a common understanding of the problems, to define objectives and to establish agreement on the remedies to be taken.

#### D. Conclusions and Recommendations

Project Rationale and Design. The rationale behind the RPMP remains valid. However, some of the expectations of the project may have been unnecessarily ambitious. The RPMP has made significant progress in those areas that are directly related to pharmaceutical procurement, e.g., port clearance, tendering, storage and inventory management, formulary development, etc. The project has, however, been less successful resolving matters that are primarily political, e.g., cost recovery and country participation.

As noted elsewhere, cost recovery is primarily a political issue. It needs to be promoted through policy dialogue between donor agencies and participating governments, and through policy-related studies such as the PRICOR operations research in Dominica and the Latin American Financing Project study in St. Lucia. In training and communication efforts ECDS should concentrate on increasing provider and consumer awareness of the cost of pharmaceuticals; ECDS should focus on cost containment. The project should not be expected to influence directly cost recovery policy.

With respect to ECDS self-sufficiency, the original design assumed that medical supplies would be included in the procurement and that Antigua would participate. This resulted in an overestimate of the administrative budget, based on 15 percent of the drugs purchased through ECDS. ECDS appears capable of generating the funds needed to cover administrative expenses if additional countries are incorporated, e.g., the British Virgin Islands, and/or if the project begins to procure a limited number of medical supplies for the countries currently participating.

Adequacy of Project Funding. The level of project funding appears adequate. The overall budget should be reviewed and some amounts shifted from one line item to another. For example, funds earmarked for renovations should probably be allocated for short-term technical assistance. In addition, it is likely that USAID will need to continue to cover a portion of the operating expenses of ECDS after the project completion date. This is reasonable given the fact that revenues generated are certain to be less than anticipated because a key country, i.e., Antigua, chose not to participate in the pooled procurement system.

Technical Assistance. It was unfortunate that the long-term technical advisors had left the region before the interim assessment took place. The assessment team was able to interview only one long-term resident advisor, the Chief of Party, and to examine some of the materials,

especially the country reports, prepared by the technical assistance team. While these documents are useful summaries of conditions in the participating countries, the quality of the reports vary considerably. It is of greater significance that the reports do not reflect the direct involvement of the health professionals of the participating country.

To serve as useful tools for planning, management, and evaluation, the reports need to involve the local health professionals in defining progress, problems, implementation plans, and specifying the actions required to achieve project objectives. Future country reports should be concise, action-oriented, clear about follow-up, and be included as annexes in the quarterly reports rather than as separate ad-hoc documents.

In the next two years the priority needs for technical assistance are in communication, forecasting, and tendering. Increased communication within ECDS, between ECDS and the participating countries, and among the health professionals of the participating countries is essential. Increased efforts are required to build an effective management team at ECDS and to promote the important benefits attached to participating in the pooled procurement system. Technical assistance should also focus on improving the management skills of country staff responsible for forecasting, ordering, storing, and distributing pharmaceuticals. Finally, the technical assistance team should carefully review the first two tendering cycles and recommend measures that need to be enacted to ensure that the procurement process is routinely capable of purchasing pharmaceutical of high quality for the most reasonable unit cost in a timely manner.

RSUP0001

**Appendices**  
**Table of Contents**

**Title**

- A. Statement of Duties
- B. Report on ECDS and CMS Computer Systems
- C. Status of Purchase Orders
- D. Financial Tables
- E. Detailed Explanation

A. General

Technical services are required to assist with the first interim evaluation of the Regional Pharmaceuticals Management Project, (538-0134), a \$3.5 million technical assistance and training project designed to improve efficiencies in the procurement and management of pharmaceuticals in the members countries of the Organisation of Eastern Caribbean States. The Project was initiated on August 5, 1987; the Project Assistance Completion Date is August 4, 1990.

The purpose of the first interim evaluation will be to examine the functioning of the regional Eastern Caribbean Drug Service (ECDS) and the progress being made in each country as compared to what was set forth in the original project paper implementation plan and subsequent ECDS workplans. It will also assess the progress made in the delivery of technical assistance as outlined in the contract for technical assistance services on both the central and country levels. The timing of the evaluation comes as the project moves from its first (start-up) phase of activities establishing the ECDS and providing intense country-level support to the Ministries of Health and their Central Medical Stores of participating governments to its second phase of project implementation wherein gains made are solidified. The results of this evaluation will be used by the Organisation of Eastern Caribbean States through its ECDS as a management tool to optimally shape activities and objectives for the coming period of increasing responsibility for country-level liaison and cooperation by the ECDS.

B. Background

The Regional Pharmaceuticals Management Project has been designed to assist OECS-member states in developing policies and programs that will result in more efficient use of health sector resources through improved procurement, management and use of pharmaceuticals and medical supplies. The Project is designed to establish a pooled tendering mechanism and improved supply management practices through the creation of the Eastern Caribbean Drug Service which is administratively situated within the Organisation of Eastern Caribbean States. Over a 5-year period, the Project will strengthen the institutional capacity of the ECDS to maintain its drug management services at a self-financing level.

The ECDS pools country drug needs for international tendering in order to lower unit costs by at least 25%. It is designed to achieve economies of scale in the efficient monitoring of individual purchase orders for each country, the management of quality assurance activities, and the publication of a regional and national formularies. Country-level activities, coordinated with the regional effort, are aimed at improving in-country logistics systems within the health sector. These activities include improving port-clearing procedures, inventory control, management information systems, in-country distribution procedures, and prescriber and dispensing practices. Cost recovery mechanisms are to be instituted to decrease the public sector burden and to further increase savings for the individual countries.

The Project is providing technical assistance, training of staff at all levels, start-up financing of the ECDS, minor rehabilitation of storage facilities, computers, vehicles, and pharmaceutical reference materials to support these activities.

### C. Scope of Work

The evaluation team will be comprised of the following six individuals: Sylvia Charles, John Gilmartin, Lennox Prescod, Jim Sanford, Anne Tinker and John Tomaro (Chief of Party).

The scope of work which follows outlines the entire evaluation strategy; the team will be responsible for collaborating on the completion of the evaluation scope of work. The team will be led by a Chief of Party (Tomaro) who in addition to his responsibility for taking the lead in assessing specific components of the project as outlined below, will be responsible for ensuring the entire scope of work is completed on time and in an acceptable manner to the Contracting Agency and to U.S.A.I.D. The responsibilities of the various team members are preceded by their surname initials (G = Gilmartin, Ti = Tinker, C = Charles, P = Prescod, To = Tomaro, and S = Sandford). Sanford's assessment will be conducted in mid-February; he will not travel with the rest of the team.

1. Review the organizational structure of the Eastern Caribbean Drug Service (ECDS) including its relationships with participating host country governments (HCGs):

- Ti&To a. Describe and assess the management structure of the ECDS including the roles and functions of its staff members vis-a- vis the technical assistance team, the adequacy and appropriateness of staffing levels, the appropriateness and adequacy of programmatic and management systems, and areas for additional staff training (if required) in terms of its present status and long term viability following the departure of the technical assistance team in the future.
- Ti&To b. Describe and assess the adequacy of the administrative and managerial linkages in place for the ECDS and the OECS in terms of programmatic and financial input, oversight and communications.
- Ti&To c. Describe and assess the adequacy of the roles and relationships of the ECDS to participating HCGs, e.g., have Project Implementation Officers been named for each country? Define and assess ECDS communication and liaison systems with participating HCGs. Are these systems structured or ad hoc? Are they adequate to inform, update and maximize interest by country-level participants (Ministry of Health drug supply managers, pharmacists, physicians and nurses, Ministry of Finance parties) in ECDS activities and project benefits?

- Ti&To d. What are the roles and functions of the Policy Board and Technical Committees? How important are the roles these committees play in setting and achieving project goals? Do policy Board deliberations find their way to the implementation stage? What mechanisms are in place to coordinate participation by national representatives to the various policy and technical committees of the ECDS to ensure optimum implementation at the national level?
- C e. Assess the financial management systems for approving payments and vouchers, forecasting project expenditures, and tracking project costs. Are these adequate to ensure an even flow of funds and adherence to project agreement financial requirements?
2. Review and assess the first tendering-contract-procurement cycle:
- G&P a. Describe and assess the tendering system established at the ECDS in terms of its adequacy, flexibility, integrity, and sustainability for the future. How well does it meet government needs and supplier standard operating procedures?
- G&P b. What modifications have been made to the system in light of the first tendering round, if any? What modifications should be made, if any?
- G&C c. Assess the volume of purchases made through the first procurement cycle. How does this volume compare to the original estimates in the project paper and to the baseline data collected by the ECDS staff and logistics advisors? What percent of total pharmaceutical procurements were estimated and actually have been made through the ECDS procurement system to date? Discuss any variations to estimated volume.
- C&P d. Assess the payment and drug account replenishment systems. Are they adequate to ensure both prompt payment and timely replenishment in the future? Does the system allow for adequate monitoring of the drug budgets and timely communications with governments to ensure that the accounts are sufficiently capitalized or can be replenished so as not to disrupt the procurement process?
- G,C&To e. Review the level of ECDS revenues estimated to be achieved through the Administrative Fee both for this first procurement and in the future. Will revenues be sufficient to cover ECDS recurrent costs? If not, why not and to what degree? Describe and assess the measures which have been taken in response to this situation.

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- To, G&C f. Particularly with reference to point (5) above, comment on the inclusion of medical supplies, roll out to the private sector, inclusion of select saleable items, e.g., pregnancy test kits, AIDS test kits, to increase the financial base vis-a-vis the additional administrative burden.
- G g. Define and evaluate the system established to assure that the drugs procured through the pooled tendering system meet acceptable standards of quality.
3. Describe and assess progress made in other areas of project implementation at the central level:
- G&S a. Describe and evaluate the management information system developed at the central level to compile drug needs, process tenders, track purchase orders, monitor supplier performance, coordinate country developments and to monitor each country's account status. Is this system manageable within the current staffing levels of the ECDS? Have linkages been established at the country level to this system? If not, why not?
- P b. What progress has been made in the adoption of a regional drug formulary? Assess the quality and design of the formulary. What means have been designed to ensure its strict adherence? Are these stipulated by legislation or widely-disseminated formal government policy?
4. Describe and assess progress made at the country levels:
- G&P a. Central Medical Stores Upgrading. Describe and assess the current status of supply forecasting, inventory management, and stock warehousing systems. What improvements, if any, have been made to these systems under the Project? Describe and assess the data collection, management and reporting systems which facilitate the receipt, storage and dissemination of drugs by the OMS/Central Purchasing Office systems. Describe and assess the level and quality of training received by OMS staff. Is further training required? Can these outstanding needs reasonably be met through the Project?
- G&S b. To what degree have the above tasks been facilitated by the introduction of a microcomputer or microcomputer equipment? Describe the level and adequacy of microcomputer training in each country provided through the project to date. Is further computer training required? If so, please describe the type of and audience for such training.

- To&G c. Drug distribution channels. Describe and assess the current status of pharmaceutical distribution systems since Project initiation. What improvements, if any, have been made in port/customs clearance? How are drugs distributed from the Central Medical Stores to end-use points in urban and periphery settings, e.g., hospital dispensaries, rural health centers? Describe and assess drug information systems already in place or introduced through the Project for ensuring adequate drug supplies to these destinations. To what degree has the Project-financed vehicle been helpful in improving supply delivery?
- P d. Formulary development. Describe and assess the role and performance of National Formulary Committees in developing the regional core and country-specific formularies. Have standard protocols been introduced in drug therapy? How strictly is the formulary followed? How active is the national committee? Have formulary efforts included prescriber, dispenser, and/or consumer education? How relevant/necessary are country-specific addenda to the regional core formulary?
- P&G e. Private sector involvement. Describe and assess project activities to date and potential opportunities for involvement by the private sector in the ECDS procurement system. What, if any, are the most promising areas for such involvement? What could such involvement mean to the administrative burden and recurrent costs of the ECDS?
- Ti&To f. User fees/cost recovery. Describe and assess the potential for the introduction of alternative financing mechanisms for drug supply in these countries? What are the most likely means of introducing cost recovery? Describe any overt obstacles or promising conditions which would effect adoption of such measures.
- P g. Prescriber/dispenser education. Assess educational programs undertaken to date to promote acceptance of project and new supply management systems and continuing pharmaceutical education for prescribers and dispensers. To what degree have pharmaceutical libraries been established and used?

5. Assess the continuing validity of the project rationale and strategy in light of the progress to date.
- Team a. Identify the problems and constraints, if any, to achieving project goals as elucidated in the Project Agreement and Project Paper for the Regional Pharmaceuticals Management Project?
- Team b. What changes are required (if any) in program strategy to facilitate achievement of Project objectives within the remaining timeframe? Specifically address the appropriateness of user fees and other cost recovery mechanisms including examples of innovative experiences of other countries in this area which might be relevant to the Eastern Caribbean.
- Team c. Review the adequacy of Project funding for implementing the program; i.e., will currently allocated funds be sufficient to complete the scope of work of the Project and to accommodate any unanticipated additional program efforts?
- Team d. Assess the configuration and timing of short and long term technical assistance to the Project. Will the strategy for future technical assistance inputs maximize the potential benefit to the ECDS? If not, how should this strategy be modified?

In performing the scope of work for this evaluation, members of the team will hold discussions with the following institutions in each country: the Ministry of Health, central medical stores, a sampling of health center dispensaries, the hospital pharmacy/dispensary (if appropriate), the central purchasing office for drugs (if separate from the OMS), the National Formulary Committee, the Pharmacists' Association, the Physicians' Association, private sector pharmacists and physicians, the Ministry of Finance and customs/port clearance offices.

The team will work cooperatively to accomplish the scope of work although specific areas of expertise are recognized and shall lead to that individual taking greater responsibility for the assessment of that particular item. These areas of expertise have been broadly defined as:

<u>Sylvia Charles</u>	ECDS financial systems
	Drug payment/replenishment systems
	Self-sufficiency, recurrent costs for ECDS
	ECCB and participating government linkages

In undertaking this assignment, Ms. Charles will take the lead in meeting with ECCB and Ministry of Finance personnel in addition to meeting with ECDS and OECS staff. Her assignment will require her to collaborate to a great extent with other team members to provide an economic perspective to such issues as including non-pharmaceutical products to the tenders list, examining the appropriateness and adequacy of ECDS staffing, and self-sustainability of the ECDS, and the potential for cost recovery.

John Gilmartin

Tenders systems, public and private sector (suppliers') perspective  
Local compounding, repackaging  
Quality assurance  
Inclusion of medical supplies in the tendering system  
Self-sustainability, user-fees, cost recovery  
Country level activities (facilities upgrading, inventory control and stock management, supply management training, port clearance)

In undertaking this assignment, Mr. Gilmartin will be paired most closely with Mr. Prescod although taking the lead on the issues noted above. Mr. Gilmartin will review the contents and overall degree of integration of drug management systems which have been computerized. The assessment of the microcomputer systems and training will be conducted by Mr. Sanford at a later date.

Lennox Prescod

Formulary  
Tenders systems, particularly public sector perspective  
Private sector participation  
Country level activities (formulary; prescriber and dispenser training; drug information systems)  
Drug information

In completing this assignment, Mr. Prescod will collaborate most closely with Mr. Gilmartin although taking the lead on such issues as noted above.

Jim Sanford

Microcomputer programming  
Systems design and implementation  
Microcomputer training

Mr. Sanford will conduct his portion of the evaluation based on assessments of the management information systems used by the ECDS, and the Central Medical Stores of St. Lucia, St. Vincent and Grenada. Following his travel to these countries, Mr. Sanford will prepare an assessment which will be incorporated into the final report. This assessment will be conducted in mid-February following the completion of work by the team.

Anne Tinker

Project design and implementation  
Organizational structure and management; staffing, etc., of ECDS  
Communications and linkages with host government organizations  
Roles and use of advisory and technical committees  
User fees/cost recovery mechanisms

Ms. Tinker will travel directly to St. Lucia from Washington to join the team on January 21. She will work most closely with Mr. Tomaro in examining the organizational structure and linkages with the country level activities and offices as well as with Ms. Charles on the potential for user fees and cost recovery.

John Tomaro

Commodity distribution from port to periphery health centers  
Expansion of tender items to include medical supplies and other health items  
User fees/cost recovery mechanisms  
Strategic organizational planning

Mr. Tomaro will work closely with Ms. Tinker, but take the lead in travelling to health dispensaries and assessing program impact at that periphery level.

C. Methods and Procedures

The evaluation team shall arrive in the Caribbean o/a January 17 where they will be briefed by the RDO/C Mission. Following introductory meetings in Barbados, the team will proceed to St. Lucia where they will meet OECS Director-General, the ECDS staff and the Technical Assistance Project Coordinator and staff. The remainder of the first week will be spent at the ECDS reviewing and assessing activities at the central level and country-level activities in St. Lucia.

In the second and third weeks, the evaluation team will go into the field to assess and review country-level activities in St. Vincent, Grenada, Dominica, St. Kitts and Montserrat. Before the close of the third week, the team will return to St. Lucia to work on the executive summary and first draft of their report and debrief the OECS. The evaluation team will return to Barbados on Friday, February 5 to debrief the USAID Mission.

The precise schedule follows: (NOTE: "duplicate" days are travel days; based on the airline schedule, they will allow some work in one of the two locations.)

January 17	Travel to Barbados
Jan 18	Briefing by USAID Mission, visit to Barbados Drug Service
Jan 19-23	St. Lucia
Jan 24-26	St. Vincent
Jan 26-28	Grenada
Jan 28-30	Dominica
Jan 31-Feb 2	St. Kitts
Feb 2-3	Montserrat
Feb 3-4	St. Lucia
Feb 5	Barbados

The contractor will work on Saturdays but not Sundays during the above timeframe.

## REPORT ON ECDS AND CMS COMPUTER SYSTEMS

June, 1988

The objective of the computer systems evaluation was to briefly examine the overall design of the computer systems in use by the ECDS and the drug management spreadsheets in use by the Central Medical Stores. The opinions herein are based on a necessarily limited review of system reports, documentation, and spreadsheets and on information obtained through interviews with the management of ECDS and personnel in the Central Medical Stores in Dominica, St. Lucia, and St. Vincent.

## ECDS Central Office Systems

Essential to the ECDS drug procurement process is the dBASE III computer program developed by MSH (ECPRO), which includes drug forecasting, tendering, contract adjudication, ordering and monitoring sub-systems. This program enables the ECDS to compile comprehensive drug requirements lists for the tendering cycle and to process orders from the individual countries. In addition, the program has the capability to monitor supplier performance, identifying suppliers with a history of slow response to drug orders.

ECPRO is an impressive system, and although it requires extensive data entry, the analysis produced is indispensable to a meaningful competitive tendering process. ECPRO's reports are easy to read and the system documentation explicit, well-organized and very informative. CMS personnel expressed general acceptance and understanding of the system.

A separate program is used to maintain each country's financial account status and to assist with projections of future funding requirements. The most serious problem in this regard is not the maintenance of the individual accounts, but instead, on the local level, that of obtaining timely government approvals for additional drug expenditures.

At the time of this review, the CMS sites were not reporting on inventories to the ECDS on a regular basis. If monthly reporting could be instituted as one element of the larger integrated system, the ECDS staff could assist the CMS staffs to identify projected shortages earlier and thereby significantly reduce the number of stock-outs and emergency orders. Regular reporting would also encourage frequent and timely updating of local CMS inventory records.

The ECDS has also implemented a system to track the administrative finances related to pharmaceutical procurement conducted on behalf of the participating countries. The accounting system in use seemed sufficient to provide reliable and timely information on administrative costs.

## Central Medical Stores Systems

At the outset, a 3-day computer training/orientation for the personnel of the Central Medical Stores was provided by ECDS, covering computer basics and Lotus 1-2-3. Several application spreadsheets were also provided, with new spreadsheets being developed and distributed by a ECDS consultant who periodically travels from island to island and provides on-going technical assistance and training. This approach has worked very effectively to accomplish rapid installation of the hardware and to introduce the staff to computer system use. Though no attempt was made during this evaluation to audit the spreadsheets in use, the overall quality appeared very good. However, the spreadsheets were not introduced as an integrated system and were not documented in a user's operations manual. A more formal systems approach would improve the user's understanding of the overall system and the relationships between the spreadsheets.

The application spreadsheets were designed to improve drug forecasting, ordering and stock management. In each office visited, these systems were already contributing to a more systematic approach to drug management and are an essential tool for cost analysis, budgeting and projections. The CMS personnel exhibited a keen interest and instinctive competence in using the spreadsheets to identify and control problem areas (i.e. stock-outs) and in many cases are already doing so. The benefits achieved through the use of these computers more than justifies the initial costs.

For example, some stores rely heavily on emergency orders which nullify some the benefits of an orderly procurement process. Timely and accurate estimates of stock reserves would greatly reduce the incidence of stock-outs. An improvement in this area could also significantly reduce losses due to drug expiration. This however requires a much closer monitoring of the stock inventory and regular and timely input of inventory data into the analysis spreadsheet. This commitment can only be made at the local level.

Dominica's CMS personnel has a broad base of computer system experience and is moving quickly to design and develop internal drug management systems of its own. The St. Lucia and St. Vincent offices are coming along well but will require additional inputs of technical assistance and training, as well as overall systems design. Independent systems development challenges the concept of standardization and is not appropriate for the smaller CMS offices. The ECDS staff, however, can draw upon the more experienced of the CMS users for applicable database and spreadsheet design, modify these for general use, and after testing, distribute them to other islands.

#### Recommendations:

CMS personnel could benefit greatly from more extensive training in both Lotus 1-2-3 and database concepts. Additional training would be most effective if linked with CMS applications, focusing on computer solutions to day-to-day drug management problems. Before commencing such training, considerable effort should be invested in designing and perfecting a complete and integrated system of application spreadsheets to accomplish the major tasks of inventory control, ordering, and forecasting. These spreadsheets should be well documented in a systems operations manual, similar to the ECPRO manual, which would describe the relationships between spreadsheet and the data entry requirements for each. Equipped with this manual, the CMS offices could plan the implementation of new spreadsheet as time permits. This approach would assure a higher level of standardization of basic reports and would relieve the individual offices of the burden of spreadsheet development.

It is essential that the ECDS take on the challenge of producing a standardized drug management system for use in the various offices. Spreadsheets are flexible enough to allow for island-specific report format changes with minimal effort and expense. The long-term benefits of having a high degree of comparability among reports from the various islands should not be underestimated.

In summary, it is easy to demonstrate the reduction in unit drug costs resulting from a coordinated drug procurement process. While these reductions are important, the major gains in cost effectiveness will come as a result of better inventory management in each CMS office. To date, the improvements in data maintenance, analysis and reporting as a result of the systems introduced by ECDS are remarkable. These systems, though still in their infancy, can serve as the foundation for a modern and effective inventory management system. Commitments of additional resources to further the training and systems implementation should be considered.

#### Reports and forms examined:

- ECDS Items Order Form
- Non-ECDS Items Order Form
- Other Supplies Order Form
- Manual Inventory Cards for Specific Drugs
- Inventory Control Spreadsheet
- Orders in Process Report
- Payment Tracking Spreadsheet
- Forecasting Spreadsheet
- Detail of Costs of Expired Drugs

CMS and ECDS staff contacted during review:

Gregory Cadet - CMS/Victoria Hospital, St. Lucia

Alban Bowman - Medical Supplies Officer, St. Vincent  
Andre Marshall - Accountant

Jean Pierre Salet - Central Medical Stores/Dominica

Sherita Gregoire - ECDS  
Maggie Huff-Pousselle  
Trevor Peters  
Francis Burnett

APPENDIX C

ECDS

Status of Purchase Orders by  
Participating Country  
February 3, 1988

<u>Country</u>	<u>Total EC\$ of P.O.s</u>	<u>Total # of P.O.s</u>	<u>Avg. EC\$ # of P.O.s</u>	<u>Purchase Orders by EC\$ Value and % of Total Order Value</u>			<u>Main Suppliers</u>	<u># of Orders</u>
				<u>&lt;\$1,000</u>	<u>&lt;\$5,000</u>	<u>&gt;\$10,000</u>		
St. Vincent	\$ 462,859	43	\$10,764	7(16%)	24(56%)	7(16%)	IMPAS Collins Pharm S. Crown	3 6 5 2
Grenada	\$ 332,280	49	\$ 6,781	8(16%)	23(47%)	10(20%)	IMPAS Collins Pharm N. Squibb	4 9 1 2
St. Lucia	\$ 323,630	23	\$14,070	4(17%)	11(48%)	8(35%)	Collins IMPAS Pharm S. Abbot	6 1 2 1
Dominica	\$ 125,414	31	\$ 4,045	9(29%)	21(68%)	2(6%)	Collins IMPAS Merck	3 3 1
St. Kitts	\$ 194,580	24	\$ 8,108	3(13%)	14(58%)	7(30%)	Collins IMPAS	4 2
Montserrat	\$ 37,796	15	\$ 2,519	5(33%)	12(80%)	0	IMPAS Merck Collins	2 1 3
TOTAL	\$1,477,000	185	\$ 7,980	36(19%)	105(57%)	34(18%)		61

Status of P.O. by Principal Supplier

<u>Suppliers</u>	<u>EC\$ Total Value of P.O.</u>	<u>% of Total EC\$ Value of all P.O.s</u>	<u>Total # of P.O.s</u>	<u>% of P.O.</u>
Collins (includes Carlisle Labs)	\$381,000	26%	31	17%
IMPAS	\$410,000	28%	15	8%

## Appendix D

### Financial Tables Pertinent to ECDS Operations

June 1986 to January 1988

- Table 1 Comparison of ECDS Procurement Costs with Historic Costs and Estimate of Reductions Achieved.
- Table 2 Value of Orders placed through ECDS, June 1987 to January 1988.
- Table 3 ECCB Transactions June - December 1987
- Table 4 Dates of ECCB Reimbursement Notice and Date of Payment by Participating Country
- Table 5 Summary Statement of Commitments and Balances by Country as of February 2, 1988
- Table 6 Drug Expenditure by Country in EC\$ through ECDS for Period June 1987 through January 1988

APPENDIX D  
TABLE 1

Comparison of ECDS Procurement Costs with Historic Costs  
and Estimate of Reductions Achieved

	ECDS Price	ECDS Fee	ECDS Total	Historic Cost	Price Reduction
Dominica	\$166,613	\$24,992	\$191,605	\$284,176	32.58%
Grenada	\$132,693	\$19,904	\$152,597	\$281,827	45.85%
St. Kitts/Nevis	\$199,464	\$29,920	\$229,384	\$294,251	22.04%
St. Lucia	\$264,247	\$39,637	\$303,884	\$834,585	63.59%
Montserrat	\$ 62,496	\$ 9,374	\$ 71,870	\$ 83,679	14.11%
St. Vincent	\$1,205,988	\$180,890	\$1,386,886	\$ 2,493,653	44.38%
Regional weighted average price reduction including ECDS fee					44.38%
Regional weighted average price reduction excluding ECDS fee					51.64%

Source: ECDS

APPENDIX D  
TABLE 2

Value of Orders Placed Through ECDS  
June 1987 to January 1988

MONTH NO. OF ORDERS	Grenada	M'serrat	St. Lucia	St. Vincents	St. Kitts	Dominica	Total
	41	15	21	41	18	17	153
June		7,425					7,425
July	200,476	17,908		275,620	11,733		505,638
Aug.			269,183		56,133	82,823	408,140
Sept.		12,562		39,230	46,826	1,308	99,926
Oct.	3,092		19,406	5,556		580	28,632
Nov.			117	34,494	18,940		536
Dec.	120,725		1,153	104,162			226,039
Jan.	7,988		33,778		60,946	47,551	150,261
<b>Total</b>	<b>332,281</b>	<b>37,795</b>	<b>323,637</b>	<b>459,062</b>	<b>194,578</b>	<b>133,262</b>	<b>1,426,597</b>

Source: ECDS

APPENDIX D  
TABLE 3

ECCB Transactions June - December 1987

	JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER		TOTAL	
	INV*	FEE**	INV	FEE	INV	FEE	INV	FEE	INV	FEE	INV	FEE	INV	FEES
Grenada <sup>1</sup>	0	0	0	0	12,188	1,828	29,868	2,026	35,276	5,291	8,661	3,753	85,993	12,898
Montserrat <sup>2</sup>	1,296	194	0	0	0	0	8,547	1,282	23,678	3,361	0	190	33,521	5,027
St. Lucia	0	0	0	0	18,453	2,768	23,554	3,533	21,126	3,169	113,216	16,982	176,349	26,452
St. Vincent <sup>3</sup>	14,396	2,159	0	0	27,412	4,112	24,081	3,616	48,887	7,333	13,656	2,048	128,432	19,268
St. Kitts <sup>4</sup>	0	0	0	0	0	0	0	0	31,023	4,653	39,808	5,389	70,831	10,042
Dominica <sup>5</sup>	0	0	0	0	0	0	16,343	2,451	0	948	20,139	2,073	36,482	5,472
Total	15,692	2,353	0	0	58,053	8,708	102,393	12,908	159,990	24,755	195,480	30,435	531,608	79,159

NOTES:

- 1 Admin fee, \$2,454, for GRE017 debited in Dec. Related inv. amt., \$16,362, debited in Oct.
- 2 Admin fee, \$190, for MON005 (Montserrat) debited in Dec. Related inv. amt., \$1,269, debited in Nov.
- 3 Admin fee, \$11, debited to St. Vincent A/C in Oct. Correct fee should be \$7.
- 4 Admin fee, \$582, for KIT003 not debited at Dec. 87. Inv. amt., \$3,880, debited in Dec.
- 5 Admin fee, \$948, for DOM015 debited in Nov. Related inv. amt., \$6,318, debited in Dec.

Amounts have been rounded.

\*Invoice = Invoiced amounts for the month.

\*\*Fee = Administration fee paid to ECDS. (15% of the invoiced amounts.)

APPENDIX D  
TABLE 4

Dates of ECCB Reimbursement Notice and  
Date of Payment by Participating Country

Country	Date of Notice	Amount EC\$	Date of Payment	Amount EC\$
Dominica	1/5/88	\$ 34,527	NOV. 87	\$ 18,794
Grenada	1/5/88	\$ 99,893	DEC. 87 FEB. 88	\$ 89,608 \$ 50,031
St. Kitts	1/5/88	\$ 76,993	---	---
St. Lucia	9/30/87 1/5/88	\$ 21,221 \$202,800	--- ---	--- ---
Montserrat	9/30/87	\$ 1,490	NOV. 87 JAN. 88	\$ 29,259 \$ 50,000
St. Vincent	9/30/87 12/30/87	\$ 48,079 \$ 99,563	NOV. 87 ---	\$ 48,079 ---

Source: ECDS and Ministries of Health

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APPENDIX D  
TABLE 5

Summary Statement of Commitments and Balances by Country as of February 2, 1988

	DEBITS			CREDITS		
	Order Value EC\$	Admin Fee EC\$	Total Commit EC\$	Initial Deposit EC\$	Replenishment EC\$	Balance EC\$
Dominica	133,321	19,998	153,319	250,000	41,954	138,635
Grenada	332,280	49,842	382,122	320,000	139,639	77,516
Montserrat	37,795	5,669	43,465	50,000	79,295	85,793
St. Kitts	194,579	29,186	223,766	216,000	—	(7,106)
St. Lucia	323,696	48,554	372,251	350,000	—	(22,251)
St. Vincent	459,062	68,859	527,921	350,000	48,079	(128,842)

Source: ECDS Purchase Order commitment statements and data from Ministries of Health

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DETAILED EXPLANATION  
for  
ECDS PROJECTED OPERATING COSTS

Appendix E

SENSITIVITY ANALYSIS #1

In general, the costs projected in this analysis represent projections for 1988. Printing costs and, possibly, Travel and Transportation may be somewhat conservative; while Office Operations and Communications may be less conservative. No allowance has been made for unexpected expenses, such as building an addition to the building, adding burglar bars, or increasing staff levels.

SALARIES

All salaries presented here are based on current staffing levels and current (1988) levels of remuneration based on the OECS classification system. All staff are currently in the first or second step of their classification which is unlikely to be true in a steady state operation as turn-over is apt to be low, especially at the senior level.

FRINGE BENEFITS

The senior staff's pension (or gratuity) is twenty-five percent (25%) of base salaries, and the support staff's pension is thirteen percent (13%) of base salaries. National Insurance Scheme (NIS) coverage is provided only for the support staff and is five percent (5%) of salaries up to a maximum of fifty (\$50) dollars per month.

OFFICE OPERATIONS

The majority of the line-items under this category are based on a monthly average of historic costs for the eighteen (18) month period from October 1986 through December 1987. Since a number of office supplies during that period had been purchased through MSH/Boston, the projected costs might be higher due to the cost of transportation, etc.. The computer service contract and the office insurance are based on the annual charge for 1987. All of these costs were increased by seven (7%) percent to allow for inflation. Depreciation is taken from the Coopers and Lybrand year-end statements for 1987; the auditors calculations for these figures do not include some of the equipment purchased through the MSH budget, i.e. two portable Toshiba computers, a video camera and a monitor.

COMMUNICATIONS

All communications costs are based on a monthly average of historic costs for the eighteen (18) month period from October 1986 through December 1987. These costs were in-

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creased by seven (7%) percent to allow for inflation.

### TRAVEL AND TRANSPORTATION

Both airfares and per diem are a weighted average of on and off-season rates for the region. The project attempts to hold meetings in islands other than St. Lucia when possible.

There will be one Policy Board meeting per year and we assume that the Minister of Health and the Permanent Secretary will come from each country as well as two (2) representatives from the Eastern Caribbean Central Bank (ECCB). The meeting should require two (2) days per diem per person.

We have assumed two (2) Formulary and Therapeutics (F&T) Sub-committee meetings, requiring an average of two and a half (2.5) days per diem per person for five country representatives and one regional expert.

The assumptions for the Tenders Sub-committee are the same as those for the F&T meetings, except that three (3) days per diem per person are assumed because these meetings are usually longer.

For ECDS staff travel, we have assumed an average of four (4) airfares and fifteen (15) total per diem days per month.

ECDS Vehicle Insurance is based on the 1987 annual payment. Vehicle maintenance, taxis, conferences, etc. are a monthly average of the historic costs for the eighteen (18) month period from October 1986 through December of 1987. All of these historic costs have been increased by seven (7%) percent to accommodate 1988 inflation.

No allowance has been made here for staff relocation, although there were relocations costs associated with two staff members during the first year of operations.

### PRINTING

Printing costs are estimates, based on approximately half the amount originally estimated in the project paper (PP). This may still overestimate the cost of publishing a regional formulary, but it does not include any other printing activities as envisioned in the PP.

### TRAINING

No expenses related to training have been included in this budget, although the PP did include allowances here. It can be assumed that some training can be done by the ECDS staff within the travel and per diem budgeted under "Travel and Transportation."

SENSITIVITY ANALYSIS #1 (SEE NOTES)  
 ANNUAL OPERATING COSTS PROJECTIONS FOR EASTERN CARIBBEAN DRUG SERVICE  
 (in Eastern Caribbean Dollars) for 1988

	QUANTITY	1988 RATE	AMOUNT	
<b>PERSONNEL</b>				
<b>SALARIES - SENIOR STAFF</b>				
Associate Director	12	\$3,767	\$45,200	
Assitant Director	12	\$3,267	\$39,200	
Accountant	12	\$2,917	\$35,000	
			-----	
				\$119,400
<b>SALARIES - SUPPORT STAFF</b>				
Secretary	12	\$1,763	\$21,150	
Computer Operator	12	\$1,483	\$17,796	
Clerk Typist	12	\$998	\$11,976	
Clerk Typist	12	\$960	\$11,520	
Driver	12	\$630	\$7,560	
			-----	
				\$70,002
<b>FRINGE BENEFITS</b>				
Senior Staff Housing Allowance	12	\$2,643	\$31,710	
Senior Staff Transport Allowance	12	\$942	\$11,304	
Senior Staff Pension	25%	\$119,400	\$29,850	
Support Staff Pension	13%	\$70,002	\$9,100	
Insurance (NIS)	12	\$229	\$2,753	
			-----	
				\$84,717
<b>OFFICE OPERATIONS</b>				
Office Supplies	12	\$1,119	\$13,426	
Bank Charges	12	\$9	\$106	
Xerox Expenses	12	\$426	\$5,117	
Computer Supplies	12	\$665	\$7,981	
Service Contract			\$863	
Cléaning	12	\$57	\$682	
Electricity	12	\$321	\$3,852	
Water	6	\$16	\$96	
Office Insurance			\$1,762	
Depreciation - Building			\$3,100	
Depreciation - Equipment			\$18,739	
Depreciation - Furniture			\$3,035	
			-----	
				\$58,779
<b>COMMUNICATIONS</b>				
Postage	12	\$560	\$6,717	
Telex	12	\$601	\$7,213	
Telephone	12	\$1,751	\$21,014	
			-----	
				\$34,943
<b>TRAVEL AND TRANSPORTATION</b>				
Policy Board Airfares	12	\$1,071	\$12,850	
Policy Board Per Diem	24	\$295	\$7,090	
F&T Airfares	12	\$1,071	\$12,850	
F&T Per Diem	30	\$295	\$8,863	
Tenders Airfares	12	\$1,071	\$12,850	

## SENSITIVITY ANALYSIS #2

This analysis is based on the previous one, except for two changes:

Existing staffing levels are the same but all individual staff members have been put at the top end of the OECS category to which they have been assigned. Since staff turn-over, particularly at the senior level, is apt to be minimal, these costs are probably closer to a reflection of steady-state reality.

On the assumption that the volume of office work will increase, seven line-items have been increased by an additional fifteen (15%) percent, i.e. office supplies, bank charges, xerox expenses, computer supplies, and all three line-items under communications.

## SENSITIVITY ANALYSIS #3

This analysis is based on the previous one, except for two changes:

Staffing levels have been increased by one additional mid-level person, at the level of a secretary.

On the assumption that the volume of office work will increase, the seven line-items associated with the volume of office work have been increased by an additional fifteen (15%) percent, i.e. thirty (30%) over analysis #1.

NOTE: It should not be necessary to inflate the operating costs of ECDS over some future period of time in order to do a break-even analysis. This statement is based on the simple assumption that the collective drug budgets of the participating countries (i.e. the ECDS revenue base) will inflate at the same rate as the the ECDS operating costs.

SENSITIVITY ANALYSIS #2 (SEE NOTES)  
 ANNUAL OPERATING COSTS PROJECTIONS FOR EASTERN CARIBBEAN DRUG SERVICE  
 (in Eastern Caribbean Dollars)

	QUANTITY	RATE	AMOUNT	
<b>PERSONNEL</b>				
<b>SALARIES - SENIOR STAFF</b>				
Associate Director	12	\$4,100	\$49,200	
Assitant Director	12	\$3,600	\$43,200	
Accountant	12	\$3,167	\$38,000	
			-----	\$130,400
<b>SALARIES - SUPPORT STAFF</b>				
Secretary	12	\$1,859	\$22,302	
Computer Operator	12	\$1,559	\$18,708	
Clerk Typist	12	\$1,074	\$12,888	
Clerk Typist	12	\$1,074	\$12,888	
Driver	12	\$690	\$8,280	
			-----	\$75,066
<b>FRINGE BENEFITS</b>				
Senior Staff Housing Allowance	12	\$2,643	\$31,710	
Senior Staff Transport Allowance	12	\$942	\$11,304	
Senior Staff Pension	25%	\$130,400	\$32,600	
Support Staff Pension	13%	\$75,066	\$9,759	
Insurance (NIS)	12	\$229	\$2,753	
			-----	\$88,125
<b>OFFICE OPERATIONS</b>				
Office Supplies	12	\$1,287	\$15,440	
Bank Charges	12	\$10	\$121	
Xerox Expenses	12	\$490	\$5,884	
Computer Supplies	12	\$765	\$9,179	
Service Contract			\$883	
Cleaning	12	\$57	\$682	
Electricity	12	\$321	\$3,852	
Water	6	\$16	\$96	
Office Insurance			\$1,762	
Depreciation - Building			\$3,100	
Depreciation - Equipment			\$18,739	
Depreciation - Furniture			\$3,035	
			-----	\$62,774
<b>COMMUNICATIONS</b>				
Postage	12	\$644	\$7,725	
Telex	12	\$691	\$8,295	
Telephone	12	\$2,014	\$24,166	
			-----	\$40,185
<b>TRAVEL AND TRANSPORTATION</b>				
Policy Board Airfares	12	\$1,071	\$12,850	
Policy Board Per Diem:	24	\$295	\$7,090	
F&T Airfares	12	\$1,071	\$12,850	
F&T Per Diem	30	\$295	\$8,863	
Tenders Airfares	12	\$1,071	\$12,850	

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SENSITIVITY ANALYSIS #3 (SEE NOTES)  
 ANNUAL OPERATING COSTS PROJECTIONS FOR EASTERN CARIBBEAN DRUG SERVICE  
 (in Eastern Caribbean Dollars)

	QUANTITY	RATE	AMOUNT	
<b>PERSONNEL</b>				
<b>SALARIES - SENIOR STAFF</b>				
Associate Director	12	\$4,100	\$49,200	
Assitant Director	12	\$3,600	\$43,200	
Accountant	12	\$3,167	\$38,000	
			-----	
				\$130,400
<b>SALARIES - SUPPORT STAFF</b>				
Secretary	12	\$1,859	\$22,302	
Additional Mid-level person	12	\$1,859	\$22,302	
Computer Operator	12	\$1,559	\$18,708	
Clerk Typist	12	\$1,074	\$12,888	
Clerk Typist	12	\$1,074	\$12,888	
Driver	12	\$690	\$8,280	
			-----	
				\$97,368
<b>FRINGE BENEFITS</b>				
Senior Staff Housing Allowance	12	\$2,643	\$31,710	
Senior Staff Transport Allowance	12	\$942	\$11,304	
Senior Staff Pension	25%	\$130,400	\$32,600	
Support Staff Pension	13%	\$97,368	\$12,658	
Insurance (NIS)	12	\$229	\$2,753	
			-----	
				\$91,025
<b>OFFICE OPERATIONS</b>				
Office Supplies	12	\$1,455	\$17,454	
Bank Charges	12	\$11	\$137	
Xerox Expenses	12	\$554	\$6,652	
Computer Supplies	12	\$865	\$10,376	
Service Contract			\$883	
Cleaning	12	\$57	\$682	
Electricity	12	\$321	\$3,852	
Water	6	\$16	\$96	
Office Insurance			\$1,762	
Depreciation - Building			\$3,100	
Depreciation - Equipment			\$18,739	
Depreciation - Furniture			\$3,035	
			-----	
				\$66,768
<b>COMMUNICATIONS</b>				
Postage	12	\$728	\$8,732	
Telex	12	\$781	\$9,376	
Telephone	12	\$2,276	\$27,318	
			-----	
				\$45,426
<b>TRAVEL AND TRANSPORTATION</b>				
Policy Board Airfares	12	\$1,071	\$12,850	
Policy Board Per Diem	24	\$295	\$7,090	
F&T Airfares	12	\$1,071	\$12,850	
F&T Per Diem	30	\$295	\$8,863	

Tenders Per Diem	36	\$295	\$10,636	
ECDS Staff Airfares	48	\$1,071	\$51,399	
ECDS Staff Per Diem	180	\$295	\$53,178	
ECDS Vehicle Insurance			\$2,366	
ECDS Vehicle Maintenance	12	\$374	\$4,484	
Taxis, Conferences, Etc.	12	\$461	\$5,531	
			-----	\$182,097
PRINTING				
ECDS Brochure			\$3,000	
ECDS Regional F&T Manual			\$30,000	
			-----	\$33,000
TRAINING				
(Nothing currently included)				
				=====
		TOTAL:		\$582,939
				=====
TOTAL ECDS ANNUAL DRUG PROCUREMENTS REQUIRED TO BREAK-EVEN:				\$3,886,261

Tenders Per Diem	36	\$295	\$10,636	
ECDS Staff Airfares	48	\$1,071	\$51,399	
ECDS Staff Per Diem	180	\$295	\$53,178	
ECDS Vehicle Insurance			\$2,366	
ECDS Vehicle Maintenance	12	\$374	\$4,484	
Taxis, Conferences, Etc.	12	\$461	\$5,531	
			-----	\$182,097
PRINTING				
ECDS Brochure			\$3,000	
ECDS Regional F&T Manual			\$30,000	
			-----	\$33,000
TRAINING				
(Nothing currently included)				
				=====
		TOTAL:		\$611,647
				=====
TOTAL ECDS ANNUAL DRUG PROCUREMENTS REQUIRED TO BREAK-EVEN:				\$4,077,649

Tenders Airfares	12	\$1,071	\$12,850	
Tenders Per Diem	36	\$295	\$10,636	
ECDS Staff Airfares	48	\$1,071	\$51,399	
ECDS Staff Per Diem	180	\$295	\$53,178	
ECDS Vehicle Insurance			\$2,366	
ECDS Vehicle Maintenance	12	\$374	\$4,484	
Taxis, Conferences, Etc.	12	\$461	\$5,531	
			-----	
PRINTING				\$182,097
ECDS Brochure			\$3,000	
ECDS Regional F&T Manual			\$30,000	
			-----	
TRAINING				\$33,000
(Nothing currently included)				
				=====
		TOTAL:		\$646,085
				=====
TOTAL ECDS ANNUAL DRUG PROCUREMENTS REQUIRED TO BREAK-EVEN:				\$4,307,230