

PD-ABE-942
ISA 79995

**HEALTH SYSTEMS SUPPORT PROJECT
APSISA "A"**

CONTRACT No. 519-0308-C-7651-00

**ANNUAL REPORT
OCTOBER 1987 TO SEPTEMBER 1988**

Submitted to:

**UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT
EL SALVADOR, CENTRAL AMERICA**

Submitted by:

Rafael A. Cedillos, M.D., M.S. - Chief of Party

**MEDICAL SERVICE CORPORATION INTERNATIONAL
1716 Wilson Boulevard
Arlington, Virginia 22209**

November 30, 1991

TABLE OF CONTENTS

	<u>Page</u>
1. INTRODUCTION	3
REVIEW OF ACTIVITIES	6
2. SUMMARY OF ACCOMPLISHMENTS	8
3. COMPONENT "A" LOGISTIC SUPPORT: SUPPLY MANAGEMENT	24
3.1 DEVELOPMENT OF THE MOH SUPPLY SYSTEM	24
3.2 SELECTION AND USE OF DRUGS	26
3.3 ACQUISITION OF DRUGS AND MEDICAL SUPPLIES	29
3.4 WAREHOUSING AND DISTRIBUTION OF DRUGS AND MEDICAL SUPPLIES	32
3.5 DRUG MONITORING	35
3.6 DRUG QUALITY CONTROL LABORATORY	44
3.7 TRANSPORTATION	49
3.8 MAINTENANCE OF BIOMEDICAL AND HOSPITAL EQUIPMENT	58
3.9 MANAGEMENT INFORMATION SYSTEM	61
4. COMPONENT "B" IMPROVEMENT OF THE DELIVERY OF BASIC MEDICAL SERVICES.	66
4.1 MALARIA CONTROL	66
5. CONCLUSIONS AND RECOMMENDATIONS	72
6. <u>ANNEXES:</u> ACCOMPLISHMENT OF GOALS AND ACTIVITIES 1988	
1: Drug Acquisition, Distribution and Management System (UMIM)	
2: Drug Acquisition, Distribution and Management System (Operational Program and Warehousing and Distribution Department - Procurement Division).	
3: Biomedical Equipment and hospital facilities maintenance (Central Maintenance Department).	
4: Transportation. (Transportation Department).	
5: Malaria Control (Malaria Department).	
Annex 6: List of MSCI personnel	

1. INTRODUCTION

In August 1986, the Government of El Salvador (GOES) and the United States of America through the Ministry of Planning and Coordination of the Economic and Social Development and the Agency for International Development (USAID/El Salvador) entered into AID Donation Agreement No. 519-0308. The project under this agreement "Health Systems Support Project" (APSISA) began its activities in El Salvador October 25, 1987.

The funding assigned for the development and implementation of the Project is \$79,585.00 of which \$48,000,000 is obligated to technical assistance and \$31,585,000 is PL-480 contribution to the Government of El Salvador in local currency.

The APSISA Project is a continuance of the AID funded Health Systems Vitalization Project (VISISA) which was implemented from 1983 to 1986. The goals and objectives of the VISISA Project were oriented towards the transfer of material resources (drugs and medical supplies), the strengthening of the transportation system and the rehabilitation and new construction of the physical facilities of the Ministry of Health (MOH). These activities were performed in an effort to assist the MOH in meeting the political and economic crisis of the country and thus, to ultimately avoid deterioration of health services.

The APSISA Project, on the other hand was designed to strengthen and support the administrative, financial as well as the technical capacity and competency of the MOH.

Specifically, APSISA has been tasked to:

- Assist in the development of policies and plans to improve the delivery of primary health care, particularly in the area of child survival.
- Resolve the recurring constraints that prevent the effective delivery of basic health services including scarcity of drugs, health supplies, laboratory equipment and inadequate procurement warehousing and distribution systems.
- Improve the management structure of the MOH to allow better coordination and distribution of human and material resources.
- Improve the collection and flow of information for the planning and management of health services at the national, regional and local levels.
- Assist in the development of strategies that will promote the health sector's financial and technical self sufficiency long term.

The following three components are the most important activities geared toward accomplishing the specific tasks of the APSISA Project which have been mentioned previously.

IMPROVING THE MOH LOGISTICAL SUPPORT FUNCTION

This component is oriented towards the development of a supply system, which will improve the MOH's capability to identify, procure, distribute and monitor the use of drugs and medical supplies in health facilities.

Another important objective of this component is to strengthen logistical support systems including inventory control, vehicle fleet management, the installation and maintenance of biomedical equipment and facilities maintenance.

IMPROVING THE DELIVERY OF BASIC MEDICAL SERVICES

Broadly, the function of the technical assistance of this component involves the procurement and distribution of resources and provision of services. The focus is toward improving the operation as well as the function of basic care facilities which include health units and posts. Activities include health manpower training at the central and regional level, management of health manpower assigned to deliver primary health care services, health education and the development of systems to improve the availability of material and financial resources.

STRENGTHENING MOH INFRASTRUCTURE FOR IMPROVED MANAGEMENT

The objective of this component is to assist in the decentralization of the MOH's public health responsibilities particularly in the area of primary health care. This objective is being achieved, in part, through the development and implementation of a management information system which will ultimately provide the Ministry with better planning capabilities particularly in manpower development, material resources including supply procurement, monitoring and evaluation.

REVIEW OF ACTIVITIES

There are two contractors assigned to implement the APSISA Project. MEDICAL SERVICE CORPORATION INTERNATIONAL (MSCI) has responsibility for APSISA "A". As such, MSCI is providing technical assistance in the following sub components:

- * Organization and development of the supply system.
(drugs and medical supplies)
- * Selection, acquisition, distribution and management of drugs and medical supplies.
- * Drug quality control
- * Biomedical and hospital equipment and facilities maintenance
- * Administration and maintenance of vehicles, parts procurement and warehousing and transportation.
- * Management Information System in the drugs and medical supply areas, transportation and biomedical and hospital equipment maintenance.
- * Malaria control.

APSISA "B" has responsibility for providing technical assistance in the following sub-components:

- * Support and strengthen the MOH capacity to deliver and support basic health care services, including preventive and primary care services.
- * Establish training program for basic health services providers and supervisors (elaborate management manuals, treatment norms and prescription guidelines)

- * Upgrade program planning skills through the proper use of epidemiological data and by promoting practical health research studies to identify critical areas in health program planning administration, budgeting and the use of human and financial resources.
- * Complete a Management Information System (MIS) to improve the program planning, control and supervision of health services and the proper use of human and economic resources.

From October 1987 to March 1988, MSCSI began technical support activities in the areas of selection, procurement, storage and distribution of drugs and in the maintenance of the biomedical and hospital equipment. From April to September 1988, additional administrative and technical assistance was provided to the MOH by the appointment of the Health Monitors (April), Transportation Advisor (April), the Computer System Advisor (May), and the Logistics Manager and System Advisor (September).

This report shows the development of the Technical Assistance of APSISA "A" in relation to:

1. Activities developed and goals obtained from October 1987 to September 1988.
2. Restrictions which have limited their progress, and
3. Recommended future activities.

In spite of the restrictions and limitations which were encountered in the development of the cooperative activities, important progress was made in the areas of selection, acquisition, storage and drugs distribution areas as well as in the transportation and malaria control.

2. SUMMARY OF ACCOMPLISHMENTS

From October 10-17, 1988, the MSCI Technical personnel participated in a evaluation session with the MOH Technical Units, APSISA/MOH Coordinators and the AID Project Manager and HPN staff. The purpose of this meeting was to review the goals and activities in the 1988 APSISA Action Plan and to discuss and identify priorities for the 1989 APSISA Action Plan.

The following is a review of the most important accomplishments achieved by the MSCI technical personnel (APSISA "A") in collaboration with the MOH's Technical Units in 1988.

2.1 Selection, Acquisition, Distribution and Management of Pharmaceuticals Technical Unit: Drug and Medical Supplies Technical Unit (UTMIM) Advisor: Clinical Pharmacology Advisor, Computer Systems Advisor and Health Monitors.

Accomplishments:

1. Reviewed and designed the mechanized system of UTMIM in order to:
 - a. Opportunely develop purchasing programs for drugs to be acquired locally (PL-480 funds) and imported (AID)
 - b. File information of the supervision inquest (UTMIM) on the use and handling of the Essential Drug List.
 - c. Make drug distribution charts.
 - d. Consolidate information on the needs and stocking of drugs in the Regional Warehouses, Hospitals and Health Centers.

2. Two training sessions were held (100 participants) for the Central and Regional health facilities personnel on the use of the Essential Drug List and of the Therapeutic Formulary.
3. Developed informative brochures on various drugs (Drugs Information Center).
4. Periodic accomplishment of drug inventory and drug monitoring at the central, regional and local level.
5. Supervised the drug distribution system at the various health levels.
6. Developed and implemented a new MOH strategy to insure the regular distribution of drugs from El Matazano Central Warehouse to the Regional Warehouses, and from these to the local level.
7. Produced a 15% increase in the availability of Essential Drugs in Health Units and Posts.
8. Achieved constant availability (55% average coverage) of drugs of the 1 and 2 use level, priority 1 (local level) in 25% of the local health establishment surveyed in two of the five Health Regions.

Activities in Progress

1. Review and organization of the computerized drug inventory system at the central, regional and local level.
2. Continue the supervision and monitoring of drugs in health establishments.
3. Standardize the system of drugs and medical supplies warehousing and distribution at the different health levels.
4. Review and updating of the Essential Drug List and the Therapeutic Formulary.

Constraints

1. Shortage of human resources at a professional and technical level to expedite the development and coordination activities in this area.
2. Need of a printer to reinforce the printing capacity of the micro computer.
3. Serious delay in receiving second micro computer ordered through APSISA.

Recommendations

1. Review and update the Essential Drug List, and actualize the Therapeutic Formulary by incorporating or eliminating the reviewed drugs.
2. Prepare a training program for personnel from health establishments in the use of the Essential Drug List and the Therapeutic Formulary.
3. Provide technical assistance to the UIMIM to prepare a pharmacovigilance project for promoting the proper use of drugs available.
4. Collaborate with the UIMIM for selecting and programming the drugs to be purchased in 1989 with AID, PL-480 and GOES funds.
5. Insure the regular distribution of assigned drugs by the Central Warehouse to the Regional Warehouses, and from these to the local level.
6. Promote an adequate drug monitoring system at the local, regional and central level to allow a decision making to expedite the drug distribution.
7. Assist in the reviewing and organizing of the computerized drug inventory system at the Central and Regional levels.

2.2 Drugs Quality Control Laboratory (UTMIM)
Advisor: Project Leader, Biomedical Maintenance Equipment and
Procurement Support Technician.

Accomplishments:

1. Installed and calibrated of 46 (65%) of the 70 pieces of laboratory equipment acquired through AID.
2. Initiated activities related to the inspection and identification of drugs that come into the El Matazano, the Central Warehouse.
3. Developed procedures for the reception of drugs and medical supplies at the Central Warehouse.
4. Supported the installation of the equipment which will provide "soft and demineralized" water to the laboratory and the installation of propane gas cylinders (in cooperation with the Central Maintenance Department).

Activities in Progress

1. Completing the outside building for the equipment purchased by AID. The equipment to be installed at the Laboratory include "soft and demineralized" water at the laboratory and the propane gas cylinders.
2. Completing the installation and calibration of the laboratory's electronic equipment (spectrophotometer, analytical scales, etc)
3. Preparing procedures manuals for the Drug Quality Control Laboratory.

Constraints

1. Slow procurement of laboratory reagents and chemical substances of reference (in process of being purchased).
2. Serious need for "softening and demineralizing" water equipment (in the process of being purchased and installed).
3. Lack of electronic equipment, which cannot be installed due to the lack of electricity stabilizers (in the process of being installed and calibrated).
4. Shortage of technical personnel (3), to carry out drugs inspection and identification activities which is done in the Central Warehouse by Laboratory technical personnel.

Recommendations:

1. Provide short term technical assistance for analyzing the administrative and operational situation of the Laboratory, and help the personnel to prepare a detailed Work Plan for 1989.
2. Support the installation and calibration of all the Laboratory equipment.
3. Support the training of laboratory personnel in complex techniques of chemical and microbiological analysis.
4. Study the possibility to establish a system of preventive and corrective maintenance for the laboratory equipment installed.

5. Support the MOH to earmark funds to acquire laboratory reagents and chemical substances of reference, and for contracting new technical personnel needed for the adequate operation of the laboratory.

2.3 Warehousing and Distribution of Drugs and Medical Supplies.

Technical Unit: Procurement Division's Warehousing and Distribution Department.

Advisor: Procurement Support Technician

The goals and activities programmed for this area in the 1988 Plan of Action were merely routine activities. The activities to which we refer are the receiving and inspection, warehousing and distribution of drugs and medical supplies. For this reason, in June 1988 the Technical Unit, the APSISA coordination group from the MOH, AID and MSCI prepared more definite goals and activities in accordance with the plan developed by a special Committee named by the Vice Minister of the MOH. The group defined a viable structural solution for improving the process of receiving, warehousing and distributing drugs and medical supplies to and from the Central Warehouse.

Accomplishments

1. Completed physical and functional reorganization of the drugs and medical supplies receiving area at the Central Warehouse.
2. Developed procedures for the reception of drugs and medical supplies which are acquired locally and imported (APSISA/AID Project). Document is being reviewed by the Institutional Development Unit (UDI).

3. Developed procedures for the quality control of drugs and medical supplies.

Activities in Progress

1. Developing procedures, regulations and flow diagram for the drugs and medical supplies warehousing and distribution areas in the Central Warehouse.
2. Developing procedures, regulations and new forms for the reception, warehousing and distribution of barbiturates.
3. Reviewing mechanization system for the medical supplies area of the Central Warehouse.

Constraints

1. Shortage of personnel at the managerial and technical level to better organize and develop the reception, warehousing and distribution areas.

Recommendations:

1. Develop norms and procedures for the reception, warehousing and distribution of drugs and medical supplies at the Central Warehouse.
2. Support the structural and functional improvements for the Central Warehouse recommended by the special Committee appointed by the MOH.
3. Study the warehousing facilities at the Regional level and collaborate with Regional Supplies Committees to prepare proposals for their structural and functional improvements.
4. Assist in the reviewing and organizing of the computerized drug inventory system at the regional level.

2.4 Acquisition of Pharmaceuticals and Medical Supplies
Technical Unit: Operation Unit, Procurement Division
Advisor: Procurement Advisor

Accomplishments:

1. Analyzed the procurement system
2. Developed plan to improve system. (this goal developed 10%). A general report was prepared: "Analysis of the Acquisition System and the identification of the ways to modernize it".
3. Prepared a Catalog of Suppliers (goal developed 10%). A sample proposal was prepared to develop the catalog under a computerized system. (draft)

Activities in Progress

1. Continuing the analysis of the acquisition system and developing regulations for its operation.
2. Collaborating with the Institutional Development Unit (UDI) in the preparation of the Supplier Catalog.

Constraints

1. The lack of definite goals for the development of an Integral Supply System for the MOH and the delay in the arrival of the Logistics Advisor, had bearing on the slow development of this component. However, this delay will be significantly compensated by the arrival of Arturo Waldron, Logistics Advisor, in September 1988, and Carlos Arturo Castaño, new Procurement Advisor, in January 1989.

Recommendations:

1. Continue on the analysis of the acquisition system and identification of ways to modernize it (by computerization).
2. Design of a computerized Suppliers Catalog
3. Develop an effective method (computerized) for follow up of bid tenders thereby reducing delays, claims and fines.

2.5 Biomedical and Hospital Equipment Maintenance.

Responsible Unit: Central Maintenance Department

Advisor: Maintenance and Biomedical Equipment Advisor

Accomplishments

1. Training of MOH technicians in the use and operation of basic biomedical and hospital equipment.
2. Evaluation of biomedical and hospital equipment corrective maintenance, according to established priorities.
3. Evaluation of preinstallation needs of the biomedical and hospital equipment acquired, by the MOH.
4. Supervision of contracts with private enterprises for the maintenance of the Rx equipment.
5. Preparation of the list of biomedical and hospital equipment, parts and materials, to be acquired with PL-480 funds.
6. Development of a census to determine the actual condition of the electrical installation facilities of all the Health Units of the Metropolitan Region.
7. Conducted parts inventory of biomedical and hospital equipment acquired by VISISA (a final report is under preparation)
8. Provided for the calibration of the OMEHDA vaporizers.

Activities in Progress

1. Conducting inventory of biomedical and hospital equipment at a national level (this strategy set to begin in December 1988 with the cooperation of the Health Regions' personnel).
2. Developing a preventive maintenance program for biomedical and hospital equipment (its development will be expedited in 1988-89) as soon as the equipment inventory is completed.
3. Conducting (census) of the water and sewerage systems of the Units and Health Posts. (this activity will be done during the taking of the equipment inventory).

Constraints

1. According to the Central Maintenance Department personnel, the following problems make the adequate operation of the department difficult:
 - Inadequate physical facilities, which do not allow any remodeling or new construction.
 - Scarcity of technical resources at a regional level (there is only one maintenance workshop in the Western Region).
 - Lack of human resources at the technical level. (The present personnel has a low level of education and a very scarce technical preparation).
 - The equipment and parts inventory has not been completed.
 - There are no maintenance manuals or guides in the health establishments.
 - Electrical installations of the equipments are usually inefficient or inadequate.

Recommendations:

1. Complete the inventory of biomedical equipment at Health Units and Posts in the five Health Regions.
2. Actualize the inventory of laboratory equipment at the clinical laboratories distributed around the country.
3. Conduct a survey to know the availability of water and sewerage systems of Health Unit and Post in the five Health Regions.
4. Collaborate with the Central Maintenance Department to develop a preventive maintenance program for basic biomedical and hospital equipment.

2.6 Transportation including Vehicle Management and Parts Procurement and Warehousing.

Responsible Unit: Transportation Department

Advisor: Short Term Transportation Advisor.

The accomplishment of goals and activities in this area were outstanding.

Accomplishments:

Developed preventive maintenance manual dealing with standards and routines for FORD F-600, Mercedes Benz, Toyota, Cherokee Jeep Diesel 1988 vehicles and Yamaha and Vespa motorcycles. A preventive maintenance program (PMP) is in place nation wide.

A cost analysis instituted for each one of the 26 established cost centers; there are only five existing centers with a point classification of less than 70% (computerized system).

A total of 109 new vehicles inventoried and distributed to the health facilities in an effort to replace and discard obsolete vehicles.

A transportation training course was given (18 participants)

Tools, shop equipment installed (from VISISA) and new transportation facility opened in San Miguel (Western Health Region).

Activities in Progress

Administrative monitoring is in process which will follow up on vehicle disposals until high cost, obsolete vehicles are removed from the MOH fleet.

Continuing with the administrative process to eliminate 109 obsolete vehicles. This is a very slow procedure due to the legal restrictions at the "Corte de Cuentas" (treasure level).

Modernizing of the Transportation Warehouses at the Central and Regional levels will be done by a short term Consultant hired by MSCI during the last quarter of 1988.

Developing Parts Inventory Management System (PIM) to improve parts procurement, warehouse administration, and general MOH transportation efficiency requires additional technical assistance.

Developing terms of reference to assist in the computerized administrative transportation system.

Constraints

1. Approval by the "Corte de Cuentas" to dispose high cost, obsolete vehicles from the MOH fleet is still pending.

2. Programs with their own fuel allocations such as Plansabar and some hospitals do not comply with transportation cost reporting requirements.
3. The source document for the actual transportation cost, needs to be reconciled with authorized vehicle distribution, in an effort to monitor the actual use versus authorized use and location of new vehicles.
4. Inability to obtain responsive quotes for the purchase of spare parts is the greatest obstacle maintaining vehicles and improving maintenance management.
5. The percentage of non-working vehicles (40.6% up to July 1988) has grown, due to the lack of parts, of funds and of human resources available and, overall, to the existence of non-repairable vehicles.

Recommendations:

1. Continuing with the administrative process to eliminate 109 obsolete vehicles from the MOH fleet.
2. Provide quarterly and annual transportation costs, maintenance management and parts information reports to regional Hospital program administrators. Collaborate in the analysis training, planning and programming visits.
3. Provide technical assistance for modernizing the transportation warehouses at the Central and Regional levels.
4. Support the installation of electrical service, tools, shelves and shop equipment to provide efficient operation of the San Miguel and Santa Ana Regional shop facilities.

5. Develop the Parts Inventory Management System (PIM) to improve parts procurement, warehouse administration and general MOH transportation efficiency.
6. Assist in the computerized administrative transportation system.

2.7 Malaria Control

Technical Unit: Malaria Department

Advisor: Malaria Advisor

The accomplishments in this area have been outstanding.

Accomplishments:

1. Malaria incidence decreased in 1987 to 2.6 cases per 1000 inhabitants; with a total of 12,834 cases reported. The Plasmodium falciparum cases; usually the highest in Central American countries, decreased in 95% that same year. From January to September 1988, a total of 5,005 of malaria cases have been reported, which represent 4,500 cases less than those reported for the same period in 1987.
2. Integral inhouse insecticide spraying and spatial spraying in the environment to protect 65% of the population in the high risk area has been accomplished up to September 1988.
3. Constructed and maintained physical works for vector source reduction control has been increased in 1988 due to a heavy rainy season.
4. More than 50% of 400,000 dwellers in high risk areas have received antimalarial treatment up to September 1988.

5. One training course was offered to 25 laboratory technicians from the General Health Services to improve malaria diagnosis at that level.
6. Initiated the Ticuiziapa engineering project (Ticuiziapa Estuary).

Constraints:

1. Further construction on the dam as well as the evacuating tube of the Ticuiziapa engineering project will be delayed until November due to severe damage caused by the heavy rainy season (May-September 1988)

Activities in Progress.

1. Development of a computerized Malaria information subsystem.
2. Complete the application of combined Malaria Control measures programed for 1988.
3. Training of Malaria personnel on Malaria diagnosis, and of voluntary collaborators (VC) on simple technics to collect blood samples and their roll on an effective malaria surveillance.

Recommendations:

1. Collaborate in the improvement of the malaria program information system to establish a faster epidemiological system to prevent epidemiological outbreaks of malaria in high risks areas.

2. Continue supporting the large scale engineering works for the reduction of vector sources (complete the Ticuiziapa engineering project, and initiate the contract of the San Diego and Metalio stuaries engineering projects).
3. Continue the training of public health service personnel on effective methodology for malaria diagnosis, control, evaluation and epidemiological surveillance to seek progressive integration of the malaria control activities into the general health services.
4. Continue the efforts to reinforce the anti malaria strategy based on the application of combined measures of control (distribution of drugs, use of insecticides and larvicides in selected areas, construction of manual and engineering works).

3 COMPONENT "A". LOGISTIC SUPPORT: SUPPLY MANAGEMENT

3.1 DEVELOPMENT OF THE MOH SUPPLY SYSTEM

The administration of supplies is one of the areas of assistance of higher impact in the health service delivery. For this reason, it is necessary that the fundamental assumptions of the system, which are to obtain goods and services in adequate quantity and quality, at reasonable prices and at the required moment, are guaranteed by the authority, with the purpose that the acquisition, storage and distribution to the consumption centers are the best possible.

Initial analysis performed by the Logistic Advisor identified several structural and functional problems of the actual MOH Supply System.

The organic structure, meant to support the Supply System, only centers in the Specific Acquisition Department of the MSPAS operative type functions (acquisition, storage and distribution) leaving the programming functions in units which are outside its jurisdiction, such as UIMIM and UTSNOM. Besides control and evaluation functions complementary to those of programming and development; coordination and supervision of the system have no specific place in any agency of the Ministry and the few activities that are done and carried out in a dispersed manner, difficulting the integrity of the System and the control of its direction.

The functions of the information sub-system are found atomized in each of the units which actually execute functions inherent to the Supply System, showing deficiencies in the conceptualization of the same, which make it impossible that the different organic units have sufficient information in terms of quality, quantity and opportunity, to rationally sustain their decisions.

There is a duplication of authority in regard to the purchasing programs designed by UTMIM and UTSNOM and the programs that come from the Procurement Office, after passing through the General Health Department and the Supply Commission. UTMIM and UTSNOM have line authority which empowers them to make decisions about the purchasing program, but the decisions predominating are those adopted by the Supply Commission, although its authority is of an assessing nature. The latter, delays the decision making process, dilutes responsibility and weakens the authority of the units on line.

The Logistic Advisor, therefore has already prepared the Plan of Action for 1989, in which the development of the integral and functional Supply System will be included as an important goal.

3.2 SELECTION AND USE OF DRUGS

3.2.1. Accomplishments during the period.

Initial efforts of the Clinical Pharmacologist were oriented to know the organization and functioning of the Drug and Medical Supplies Technical Unit (UIMIM), in order to elaborate a program of activities to rationalize the selection, acquisition, distribution and use of drugs. This activity started during the first week of December 1987.

In the Annex 1 a summary of the accomplished goals and activities is presented.

The first goal, related to training of personnel from the health establishments on the proper use of the Essential Drug List and the Therapeutic Formulary was accomplished throughout the reported period. Around 200 persons involved in handling drugs and chiefs of warehousing from the Metropolitan and Central Region, and from the San Rafael Hospital (Santa Tecla) received this training. Training activities were also complemented with periodic meeting promoted by the UIMIM to discuss with the Regional Supplies Committees aspects related to the logistic of drug warehousing, distribution and use.

A second goal, oriented to implement the surveillance activities on the use of drugs at the local level was developed in the San Bartolo Health Center. Information gathered on drug prescription, warehousing and distribution served as guidelines to other health centers.

Collaboration was provided to the UIMIM for developing and implementing the Drug Information Center Project, which was financed by the Pan American Health Organization. Pamphlets were prepared on the adequate use of aminophylline and Penicillin G Sodium/potassium, which were submitted to the Unit for its distribution to the health establishments.

Support was also given to assist the UIMIM in the drug selection and programming of local purchases (PL-480 and GOES funds) and imported (AID funds). Two purchase orders were elaborated to acquire drugs of use level 1, 2 and 3, priority 1 in the U.S. markets. For all this purchase process, technical cooperation was provided to insure that the appropriate presentation, concentration and specification of drugs were in agreement with the Essential Drug List recommendations.

The review and updating of the Essential Drug List was an important task initiated in collaboration with the UIMIM. Requirements for inclusion/exclusion of drugs are under evaluation to prepare a preliminary report for the National Therapeutic Committee, who will meet in February 1989.

3.2.2 Obstacles to maintain/extending beneficial results.

The most important limitation encountered was the lack of human resources at the professional and technical level to expedite the development and coordination of activities in this area. The UIMIM has multiple technical and administrative obligations and few personnel for accomplishing such tasks.

3.2.3 Recommended future activities

The review and updating of the Essential Drug List will demand full time work from the Clinical Pharmacologist Advisor. It will be necessary to prepare a document with selected information on drugs requested to be included/excluded from the Essential Drug List, and collaborate with the Unit to organize the Therapeutic Technical Committee meeting in February 1989. As part of this activity, the Therapeutic Formulary will be actualized by incorporating or eliminating the reviewed drugs.

UTMIM is also requesting technical assistance to prepare a pharmacovigilance project for promoting among the health establishments the proper use of drugs available. This project must be implemented in 1989.

In coordination with the Logistic and Computer Advisors, activities are planned for selecting and programming the drugs to be purchased in 1989 with AID, PL-480 and GOES funds.

Training of personnel from health establishments in the use of the Essential Drug List and the Therapeutic Formulary will continue in 1989.

3.3 ACQUISITION OF DRUGS AND MEDICAL SUPPLIES

Cooperative activities on this area were carried out in the Operations Program Section, one of the four sections that compose the Acquisitions Department of the MOH Procurement Division, where all purchases for the MOH are processed. The Procurement Advisor's principal responsibility was to strengthen the capacity and effectiveness of the MOH Procurement System, to assure that both project-funded commodities and services, as well as those financed by Salvadorean resources were properly selected, adequately specified, put out for bid, and subjected to correct and effective bid evaluation and contracting procedures, as well as tracked through shipping and port procedures, cleared through customs and properly received and stored.

In late January 1988, an appropriate Action Plan was submitted and approved by USAID and the MOH, which included the following important goals:

- a. Analysis of the system of acquisitions and identification of ways to modernize it.
- b. Design of a computerized supplies catalog, and
- c. Develop an effective method for follow up of bid tenders thereby reducing delays, claims and fines.

The first two tasks were taken place in the Operation Program Section. No work was undertaken on task three, due to time limitation.

3.3.1 Accomplishments during the period

In the Annex 2 a summary of the accomplished goals and activities is presented.

The Procurement Advisor completed the report "Analysis of the Acquisition System and identification of ways to modernize it" in collaboration with personnel from the Operations Program/Procurement Division.

This Report contains information about the acquisition process, as well as comments concerning the excessive manual and typing work involved, and presents suggestions for using a computerized system to organize and accelerate the whole process.

The report was analyzed by members of MSCI, AID and the national counterparts. As a collection of existing data related to the acquisition process the report succeeded. However, the document failed to provide adequate information and recommendations to simplify and modernize the acquisition process. Consequently, it was proposed to stop working in the second task of the 1988 Action Plan (to review the Procurement Suppliers Catalog) in order to give special attention to the rules and procedures which govern the bid tender process carried out by the operation program section.

An internal survey of the Procurement Division as well as an external survey of the Drug Medical Supply Technical Unit (UTMIM) and of the Non Medical Supply Technical Unit (UTSNOM) was conducted to identify inconsistencies of the process and recommend adequate solutions.

The following problems were identified and comments for their corrections were made in the recommendation section of the final document:

- a. Need for norms, procedures and explicit rules regarding every type of purchase carried out in the section.
- b. Need for more timely receipt of legal documents on the part of the contractors.
- c. Need for better equipment (microcomputers, photocopy machine, etc.)
- d. Need for computer training
- e. Need of Technical personnel and training.

3.3.2 Obstacles to maintain/extending beneficial results

The lack of definite goals for the development of the integral Supply System for the MOH and the absence of the Logistic Advisor, coordinator of this activity, had bearing on the slow development of this component. Efforts were made to have a diagnosis of the Operation Program's problems. However, difficulties were confronted to propose integral solutions to solve problems identified within and outside the Procurement Division.

3.3.3 Recommended future activities

Upon the arrival of a new Procurement Advisor and the Logistics Manager and Systems Advisor works will continue on the analysis of the acquisition system, as well as on the computerized design and operation of the Suppliers Catalog and the development of an effective method for follow up of bid tenders and purchases. This activity will be unmarked within the development of the MOH integral supply system.

3.4 WAREHOUSING AND DISTRIBUTION OF DRUGS AND MEDICAL SUPPLIES

3.4.1 Accomplishments During the Period.

The Drug Warehousing components being developed and implemented under the "APSISA Project", advanced successfully throughout 1988, renovating and strengthening key areas within the MOH warehousing system.

The Central Warehouse reception area containing pharmaceuticals and medical supplies was partially restructured. A new and organized flow of all incoming drugs was developed and implemented (Figure 1 and 2). All administrative equipment and human resources needs were fully identified and formal request to the MOH was made. Also, marked zones within the reception area were done, identifying specific storage space for incoming drugs. Reception norms and procedures as well as new control formats were developed.

The Central Warehouse (MATAZANO) computerized inventory system was reconditioned and tested. Gradually, its implementation is becoming a success. Inventory reports of end used drugs as well as the newly arrived drugs inventory list is being printed out by the warehouse computer.

The MOH existing drug supply system doesn't keep up with the Salvadorian population growth rate nor with the health services they should be provided with today. Various MOH departments (UIMIM-Procurement Dept., D.Q.C.-APSISA - Institutional Development Unit and Central Warehouse) studied better ways to progressively develop programmed goals as a unit and

to find faster solutions to the existing drug supply system. The Central Warehouse (MATAZANO) was used as the starting point, and periodic meetings were held to observe the entire warehousing process, including shipments of newly arrived drugs at the warehouse. In addition, personnel needs, adequate loading and unloading equipment, and room temperature was recorded on a monthly basis (Figure 3 and 4). Pick arrival times of goods were registered and identified (Figure 5). Available storage space, as well as the amount of time and personnel needed to check and count arrived goods were also studied. Recommendations and ways to improve the system are being discussed with the MOH.

3.3.2. Obstacles to Maintain/Extending Beneficial Results.

Main limitations were: insufficient technical personnel as well as laborers, lack of adequate equipment, lack of storage space and poor managerial organization at the MOH Central Warehouse and the Procurement Department.

NOTE:

The limitation of personnel follows a government restriction which prohibits hiring new personnel.

3.3.3. Recommended Future Activities

- 1 - Raise roof top and build a natural air flow control device in all warehouses.
- 2 - Expand storage capacity for future procurements.
- 3 - Training sessions and work shops on Warehousing are needed for personnel training.
- 4 - MATAZANO complex needs a security system for the safe keeping of all stored goods.
- 5 - Quality Control Laboratory should establish standards on time needed to check and analyze all newly arrived goods.
- 6 - Implementation of written warehousing norms and procedures.

CENTAL WAREHOUSE-MATAZANO
RECEPTION AREA OF PHARMACEUTICALS AND MEDICAL SUPPLIES

REORGANIZATIONAL FLOOR PLAN

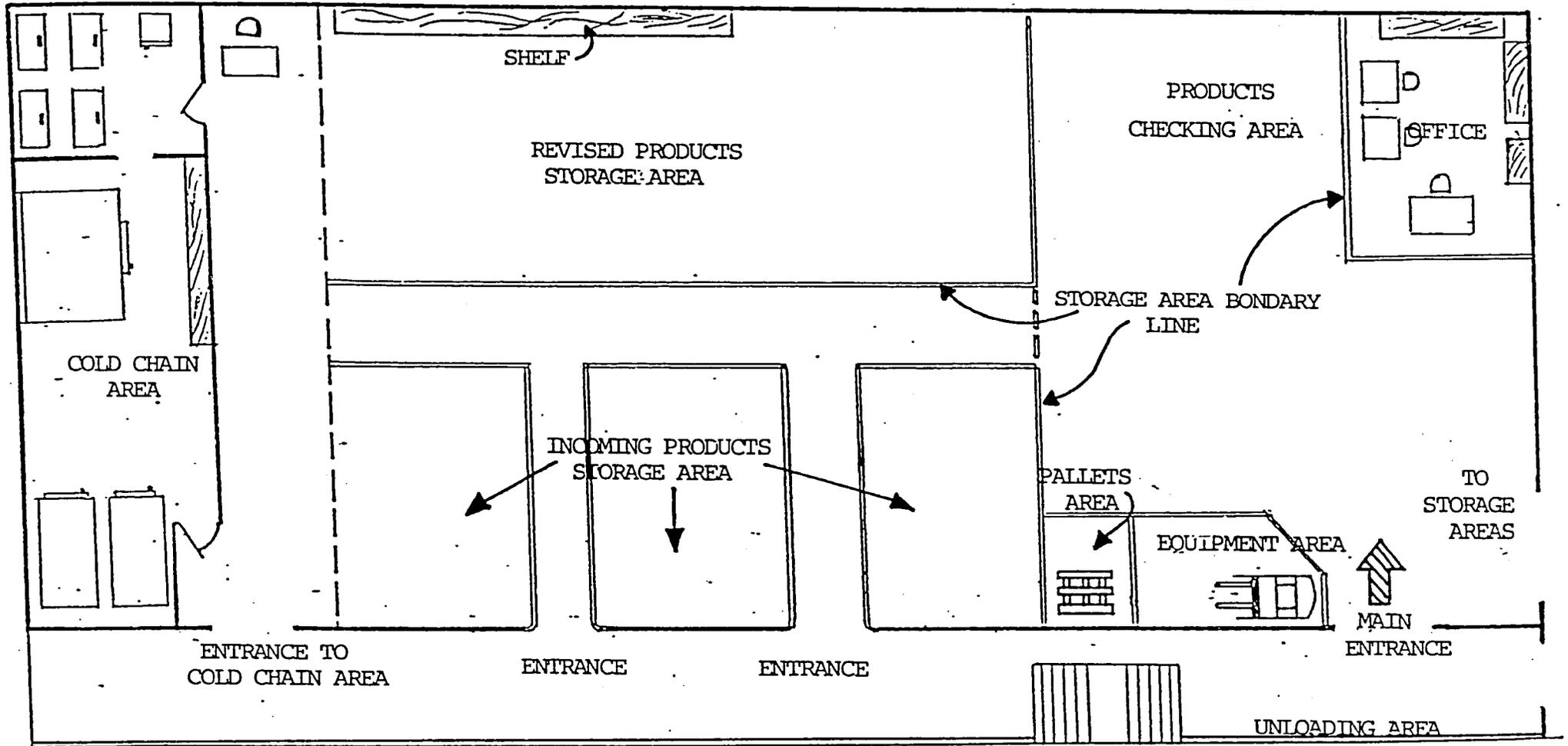


FIGURE 1

NOTE:

THE RECEPTION AREA OF PHARMACEUTICALS AND MEDICAL SUPPLIES WAS REORGANIZED AND ITS INTERNAL ZONES NAMED, PRODUCTS INCOMING TO THE AREA DO FOLLOW A SPECIFIC FLOW SINCE ITS ARRIVAL, TO THE MOMENT THAT PASSES TO THE STORAGE AND DISTRIBUTION AREA. (WAS IMPLEMENTED ON JUNE 1988)

24/8

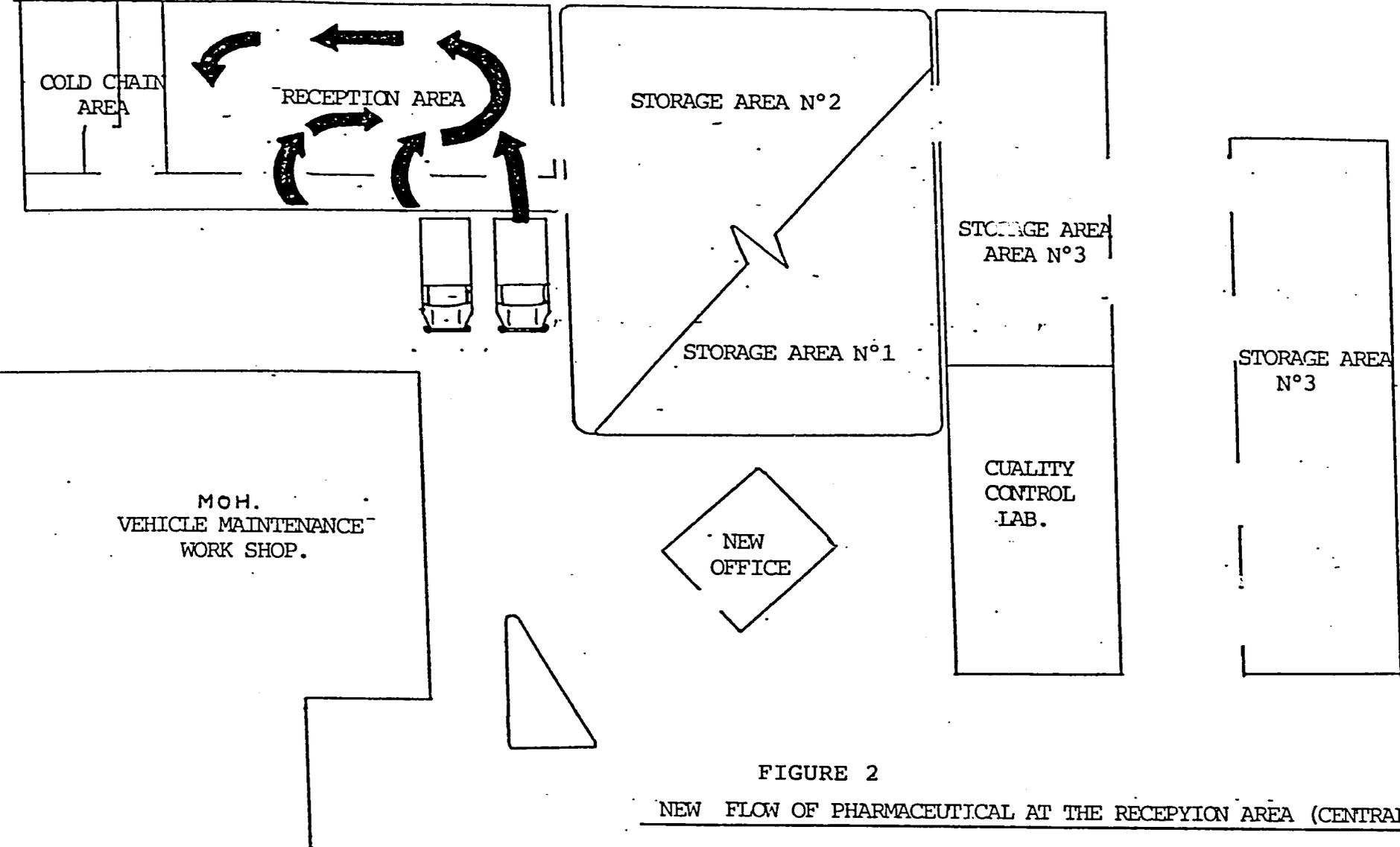


FIGURE 2
NEW FLOW OF PHARMACEUTICAL AT THE RECEPYION AREA (CENTRAL WAREHOUSE)

CENTRAL WAREHOUSE OF PHARMACEUTICALS AND MEDICAL SUPPLIES

340

CENTRAL WAREHOUSE OF PHARMACEUTICALS AND MEDICAL SUPPLIES

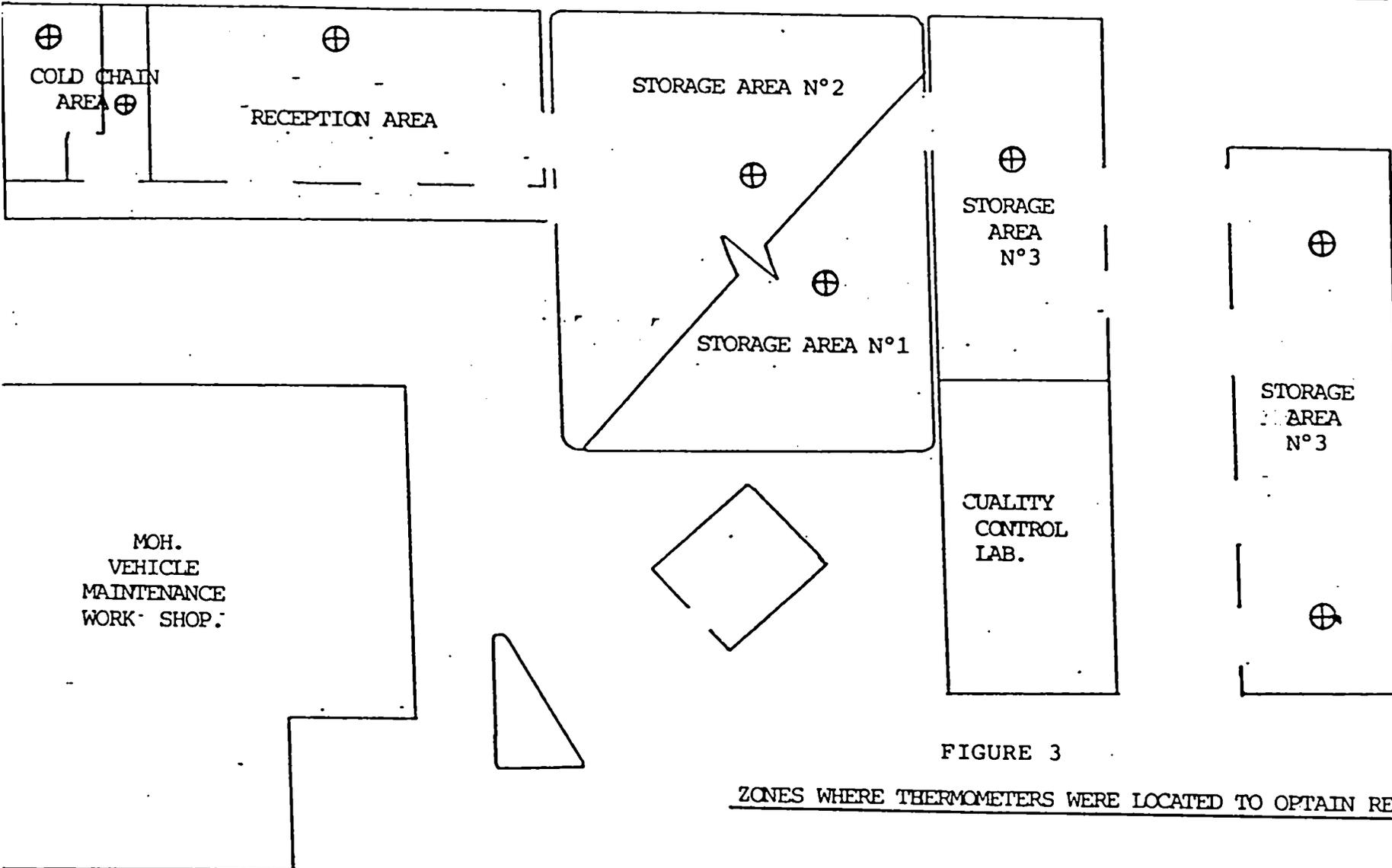


FIGURE 3

ZONES WHERE THERMOMETERS WERE LOCATED TO OBTAIN READINGS

⊕ THERMOMETERS

34C

PLACES WHERE READING WAS TAKEN (CENTRAL WAREHOUSE)	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	ANNUAL PERCENTAGE
RECEPTION AREA	35°	36°	36°	35°	35°	34°	35°	34°	35°	33°	36°	36°	35°
OFFICE	36°	36°	37°	37°	36°	36°	36°	36°	36°	36°	36°	36°	36.1
STORAGE AREA N° 1	26°	27°	27°	27°	27°	28°	27°	27°	27°	27°	27°	26°	26.9°
STORAGE AREA N° 2	28°	29°	28°	28°	28°	29°	29°	28°	29°	28°	29°	28°	28.4°
STORAGE AREA N° 3	37°	38°	37°	36°	36°	35°	36°	36°	36°	36°	36°	36°	36.2°
STORAGE AREA N° 3 (OLD PLANSABAR)	36°	36°	36°	36°	36°	35°	36°	36°	36°	36°	36°	35°	35.8°
OLD CHAIN AREA	20°	20°	19°	19°	19°	20°	19°	19°	19°	22°	22°	21°	21.5°

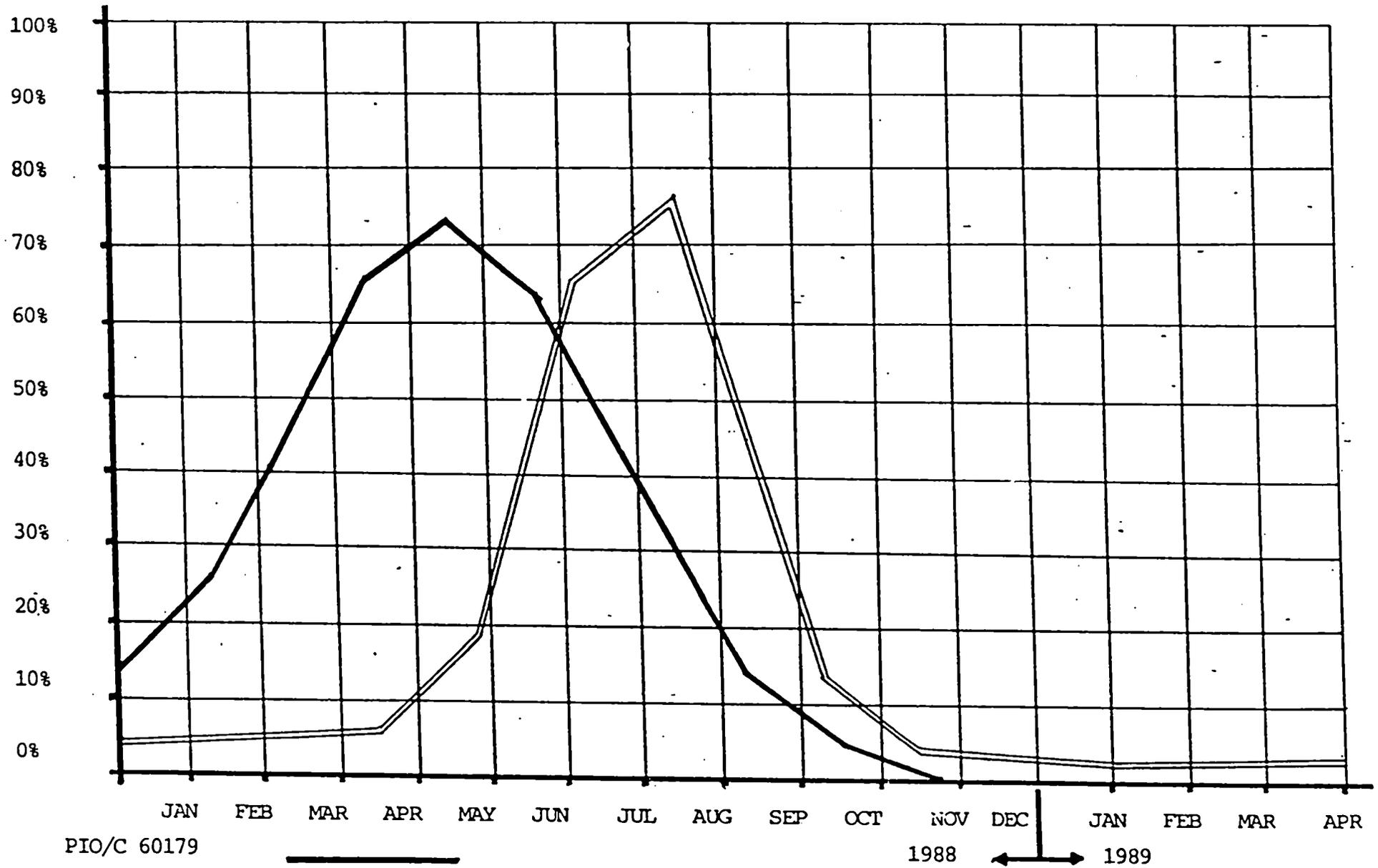
ghe

AREAS WHERE READING WAS TAKEN	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	ANNUAL PERCENTAGE
RECEPTION AREA	35°	36°	36°	35°	35°	34°	35°	34°	35°	33°	36°	36°	35°
OFFICE	36°	36°	37°	37°	36°	36°	36°	36°	36°	36°	36°	36°	36.1
STORAGE AREA N° 1	26°	27°	27°	27°	27°	28°	27°	27°	27°	27°	27°	26°	26.9°
STORAGE AREA N° 2	28°	29°	28°	28°	28°	29°	29°	28°	29°	28°	29°	28°	28.4°
STORAGE AREA N° 3	37°	38°	37°	36°	36°	35°	36°	36°	36°	36°	36°	36°	36.2°
STORAGE AREA N° 3 (PLANSABAR)	36°	36°	36°	36°	36°	35°	36°	36°	36°	36°	36°	35°	35.8°
COLD CHAIN AREA	20°	20°	19°	19°	19°	20°	19°	19°	19°	22°	22°	21°	21.5°

FIGURE 4 - TEMPERATURE CONTROL CHART AT CENTRAL WAREHOUSE (MATAZANO) - 1988

2/16

FIGURE 5
ARRIVAL OF PHARMACEUTICALS TO CENTRAL WAREHOUSE 1988



PIO/C 60179

—————

GOES

=====

348

3.5 DRUG MONITORING

Plans to obtain an efficient distribution of drugs and medical supplies were initiated with the project VISISA, during the period 1985-1987. Throughout the VISISA Project, important advances were made to create the physical facilities for storage of pharmaceuticals (construction of El Matazano Warehouse and remodeling of various regional warehouses), and activities designed to develop a process for the selection, acquisition and distribution of drugs, were started at the different health levels when the Drug and Medical Supplies Unit (UTMIM) was created.

However, when APSISA initiated its activities in this area, it found an irregular system for the distribution of drugs due to lack of planning or implementation of important activities of the process. Some of the problems identified at that time:

- a. Lack of information and communication between UTMIM, and the Procurement Division's Warehousing and Distribution Department.
- b. Lack of transportation in the Warehousing and Distribution Department to carry out an active process of distribution.
- c. Inefficient control of drug inventories, specially at the regional level.
- d. Inadequate use of the daily consumption tabulator, which makes rationalizing the demand of drugs impossible.
- e. Inadequate storage conditions at the regional and local levels.

As a result, an inefficient program of deliveries was detected, especially in the Health Units and Posts. Overstocking of drugs in some warehouses and/or shortage of them in others and important losses of drugs due to expiration dates were also reported from regional and local warehouses.

In an attempt to develop a solution to these problems, in April of 1988, MSCl organized the group of Health Monitors who were assigned to collect and analyze information about inventories and distribution of drugs, identify limitations which make the distribution process difficult and plan possible solutions at the central and regional levels.

The Health Monitors also provide important support services for the MSCl long-term advisors in this area as well as promoting managerial and technical direct communication between them and MOH management and operations personnel at the regional and local levels.

3.5.1 Health Monitors.

The Health Monitors are a logistic support group who provide technical assistance to MSCl. They have been tasked to participate in the development of a system for the effective storage and distribution of drugs and medical supplies by MOH. The group consists of five Salvadoran professionals or technicians experienced in health care, health logistics, and/or drug management. Their selection was determined by MSCl and the MOH.

a. Drug Monitoring Objectives:

The Health Monitors are helping to accomplish the following basic objectives:

1. Support an efficient coordination between the MSCI technical assistance and MOH in promoting adequate use of the economic resources of the APSISA Project in the area of drugs and medical supplies.
2. Collect and assist in the analysis of information on warehousing facilities and proper distribution and use of drugs and medical supplies at the different health levels. This is achieved after having defined critical areas and control points.
3. Provide continued technical assistance to the UIMIM and the Warehousing and Distribution Department to improve the drug inventory control system.
4. Participate in the evaluation of drugs and supply management at Central and Regional levels.

b. Coordination of activities

The coordination of activities of the Health Monitor Group is under the direct responsibility of the MSCI Logistics Advisor and the Chief of the Drug and Medical Supplies Technical Unit (UIMIM). Their work program is wide-ranging and is structured as follows:

1. The group is coordinated and supervised by the MSCI Logistics Manager and Systems Advisor. They are physically located at MSCI's office in San Salvador.

2. The work program is prepared by the Health Monitors under the direction of the Logistics Advisor and according to priorities established in joint agreement with UTMIM and the Regional Health Director with its corresponding Regional Supply Committee.
3. A member of the group is assigned to each Health Region, where he works in coordination with the Regional Health Director and the Regional Supply Committee, in the development of activities programmed for its simultaneous realization, in the five Health Regions.
4. The group processes and analyzes the information obtained and prepares a collective report for its discussion and implementation of decisions at UTMIM and the Warehousing and Distribution Department (central level) and at the Regional Supply Committee (Regional and local levels)

The Health Monitors design and conduct their activities so as to promote the critical need to transfer their functions to the MOH personnel, particularly in the UTMIM and the Regional Health Administrations.

These activities are varied, but circumscribed by the area of warehousing, distribution and use of drugs and, by extension, the area of maintenance of the biomedical equipment.

The Health Monitors' principal activities follow:

1. Conduct periodic inventories of drugs and medical supplies at El Matazano Central Warehouse, Regional Warehouses, Hospitals, Health Centers, Units and Posts, to insure its adequate distribution and use at all levels of the Health System.

2. Perform periodic monitoring of drugs to determine needs, availability, surplusage, expiration dates, to speed up its distribution and use, specially at the local level.
3. Assist in the design and implementation of warehouse reorganization plans at the Regional and local levels, and participate in the development of norms and procedures to improve the efficiency of the warehousing and distribution process.
4. Collaborate in the review and development of the manual and computerized inventory control system recommending modifications to insure its proper use at the different levels of the system.
5. Cooperate with the MSCI Biomedical Maintenance Advisor and the MOH Central Maintenance Department in carrying out the inventory of biomedical equipment in health centers and thus collaborating in the development of a preventive maintenance program for this equipment at the regional level.

3.5.2 Accomplishments during the period:

According with the program, the Health Monitors completed during this period the drug inventory in El Matazano Central Warehouse, in the Regional Warehouses, in several Hospitals and Health Centers and in representative samples (25.0%) of the total Health Units and Posts in the five Health Regions. Table 1 presents a summary of the activities carried out and the achievements obtained by the Health Monitors.

These activities allowed:

- a. In April, to collaborate with the General Direction of Health and UIMIM in preparing the program to distribute 100% of the PIO/C 69179 drugs assigned to health establishments for the period January-June of 1988.
- b. In May, program and follow up the distribution of these drugs to the Regional Warehouses.
- c. In June, analyze with the Regional Supply Committees, the information of drugs, surplus and drugs with inadequate utilization levels at the health establishments to promote their redistribution at the regional level.
- d. In June, analyze with UIMIM, the information sent by the Regions and hospitals about needs and oversupply of drugs to prepare the assignation of drugs for the semester July-December of 1988.
- e. Monitor the availability of 144 pharmaceuticals of use level 1, 2 and 3, priority 1 and 2, in 25% of the primary health care establishments in the five Health Regions. This information allowed the taking of decisions at the central and regional levels for an adequate distribution and redistribution of drugs. For example:
 - Identification of drugs available at the Regional Warehouse and not available in Health Units and Posts. (Action suggested: make an adequate regional distribution of drugs).
 - Identification of drugs not available at the Regional Warehouse, but available at Health Units and Posts. (Action suggested: order transfers among establishments).

- Identification of drugs not available at the Regional Warehouse nor at Health Units and Posts, but assigned by UIMIM. (Action suggested: request delivery of assigned drugs to the Central Warehouse).
- Identification of drugs not assigned by UIMIM and not available at Health Units and Posts. (Action suggested: request UIMIM for drugs assignation).
- Identification of drug with close expiration dates. (Action suggested: order redistribution among health establishments).
- Collaborate with the General Direction of Health and UIMIM in implementing a new strategy to insure regular distribution of drugs from the Central Warehouse to the Regional Warehouses and from these to the local level. (Action suggested: Follow up the drug distribution, according to their programmed assignation).
- Insure the regular availability of drugs of use level 1 and 2, priority 1 (local use) in the different Units and Health Posts monitored.

The activity developed by the Health Monitors was effective within the programmed goals. The group, temporarily made up of three members, managed to obtain and analyze information on drug inventories and distribution to promote the taking of decisions at the UIMIM, General Direction of Health and Regional Supply Committees levels, to improve the process at the central, regional and local levels.

3.5.3 Obstacles to maintain/extending beneficial results.

The lack of transportation was a problem during the first semester of 1988 which limited the integration of the five member group of Health Monitors. The slowness in the selection process on the part of MOH represented an additional problem in the second semester. The transportation problem was solved in August of 1988 when the project received the six vehicles assigned. The integration of the five member group will be completed in November 1988.

3.5.4 Recommended Future Activities

The MOH's decision to go ahead with a new strategy to expedite a more efficient distribution of drugs up to the local level will demand active participation from the Health Monitors. The implementing of the strategy presupposes the systematization of several procedures already being used, among which the following can be mentioned:

- a. Insure the regular distribution of the bimonthly assignation of drugs by the Central Warehouse to the Regional Warehouses, and from these to the local level.
- b. Promote the development of an adequate drug monitoring system at the local, regional and central level to allow a decision making to expedite the drug distribution.
- c. That the Health Units and Posts prepare their drugs requisition on actual consumption.

- d. Promote an effective supervision activity of drug distribution at regional and local levels, and
- e. Assist in the reviewing and organizing of the computerized drug inventory system at the central and regional levels.

On the other hand, drug monitoring of 144 drugs of use 1 and 2, priority 1, will be conducted in representative samples (25%) of Health Units and Posts of the Eastern, Central and Paracentral Health Regions. At the end of 1988, information on drug surplus, drugs out of stock and drugs with inadequate utilization levels will be available from the five Health Regions. This information will help to promote an effective redistribution of drugs among the regional health establishments, review their request for future drug assignments, prioritize and speed-up drug dispatch from the Central Warehouse, and elaborate future drug purchases by APSISA in 1989.

In November and December 1988, plans are to monitoring of 84 pharmaceuticals included in the PIO/C 70157 and 70192, which will arrive to the Central Warehouse during the first quarter 1989. This activity will be conducted in 14 hospitals, 13 Health Centers, the 5 Regional Warehouses and the Central Warehouse. The actual existence of these drugs in the health establishments will help UIMIM to orient their future distribution and at the same time, review the purchase program of these drugs for 1989.

Efforts will be made to coordinate the supervision activities carried out by UIMIM with the activities of the Health Monitors, to institutionalize a monitoring and supervision methodology to help in the taking of opportune decisions on drugs distribution and use at the Central and Regional level.

DRUG MONITORING DEVELOPED BY THE HEALTH TECHNICAL ASSISTANTS - MSC/AID

No.	DATE	DRUGS	ESTABLISHMENTS	GOALS	ACCOMPLISHMENTS	OBSERVATIONS
1.	March 23 April 12	PIO/C 60179 (67 drugs)	1. Hospitals from the Metropolitan Region, 5 Regional Warehouses Central Warehouse 2. 14 Hospitals 5 Regional Warehouses Central Warehouse	Despatch drug assignments and assist with the revision of priorities at El Matazano Central Warehouse.	- Distributed large quantities of drugs stored at El Matazano - Increase drug availability at hospitals and regions.	- Suggestions at the Central level.
2.	April 22-29	PIO/C 60179 (67 drugs)	10% of the total Health Centers, Units and Posts (35 establishments).	Compare Regional stock of drugs, existent at the Regional Warehouses with those assigned by the UTMIM and their availability at the establishments.	- Promote drug dispatch from Regional Warehouses to Units and Posts. - Restructure the request for future drug assignments. - Check utilization levels.	- Suggestions at the Regional and Central level.
3.	May 23 June 3	PIO/C 60179 (67 drugs) and others.	100% of the total hospitals, Health Centers and Regional Warehouses.	Compare drug assignments, balances and coverage for drug assignments July/December 1988. - Drugs out of stock. - Drug surplus. - Establish shelves conditions.	- Redistribution of drugs - Drugs assignment. - Inventory of the laboratory equipment condition.	- Suggestions at the Regional and Central level.
4.	June 27 July 7	PIO/C 60179 bidding # 21/87 132 drugs	25% of the total Health Units and Posts from the Western Region (15 establishments).	- Compare Central and Regional Warehouse situation and drug availability at establishments. - Drugs out of stock - Drugs surplus - Drugs with inadequate utilization levels.	- Redistribution and Transferences of drugs - Prioritize despatch and revision at the Central Warehouse. - Inventory of the laboratory equipment conditions.	- Drug monitoring of 132 drugs. Final Report of 67 drugs. Level 1 and 2. Suggestions at Central and Regional levels.

DRUG MONITORING DEVELOPED BY THE HEALTH TECHNICAL ASSISTANTS - MSCI/AID

No.	DATE	DRUGS	ESTABLISHMENTS	GOALS	ACCOMPLISHMENTS	OBSERVATIONS
5.	August 9 - 19	109 drugs with levels 1 and 2 priority 1; from which 35 drugs were purchased by APSISA, plus 30 drugs with use levels 1 and 2 priorities 2 and 3 also purchased by APSISA. Total = 148 drugs	66% of Posts and Units from the Metropolitan Region, (18 establishments).	<ul style="list-style-type: none"> - Provide information concerning drug availability and reception situation at the Regional and Central Warehouse Level. - Urgent drugs out of stock. - Drugs surplus. - Overstock drugs. - Information concerning furniture conditions at Warehouse and Pharmacy. 		<ul style="list-style-type: none"> - Establishments visited for the first time. - Results will be known at Regional and Central level.
6.	September	PIO/C 70157 35 drugs.	100% Hospitals and Health Centers and the Regional Warehouse.	<ul style="list-style-type: none"> - Provide information to prioritize and speed-up despatch of incoming drugs for October/88. - Assist the UTMIM with drugs assignments according to drug stock levels demands. - Follow-up low consumption products reported during drug monitoring III to avoid expiration dates. - Urgent drugs. - Drugs without demand. - Drug surplus. 		Drug redistribution and transferences among the Health establishments.

3.6 DRUG QUALITY CONTROL LABORATORY

The Drug Quality Control Laboratory was created by the Project VISISA, in 1986 as part of the Drug and Medical Supplies Technical Unit (UTMIM). In 1987, the construction of a one floor building was completed in El Matazano and the installation of the equipments acquired by USAID was started.

The basic objective in creating the Laboratory was that of providing UTMIM with the necessary technical element to determine the security and effectiveness of the drugs acquired by MOH, specially that of those incorporated in the Essential Drug List.

During the first quarter of 1988, MSCI in coordination with UTMIM, Laboratory personnel and members of AID and the coordinating group of APSISA from MOH analyzed the administrative and operational situation of the Laboratory to determine the collaboration needed to help support its operation. It was found that the operation was still behind because of the following technical problems:

- a. Delay in the installation and calibration of the electronic equipment (analytical, spectrophotometer, chromatograph, etc.) due to lack of polarized electric installations and power stabilizers needed for the stable operation of the equipment.
- b. Lack of special equipment to provide "soft" and demineralized water to the laboratory.

- c. Lack of propane gas.
- d. Autoclave and water distillers not yet installed for lack of "soft" and demineralized water.
- e. Lack of laboratory reagents, culture media and chemical substances of reference.

Among of these problems, the acquisition of laboratory reagents and chemical substances of reference was the most complex problem to solve due to their high cost and the need to acquire them abroad. It was advised that their purchase be programmed by stages and considering the work programs for 1988 and 1989.

On the other hand, the Laboratory has the duty to carry out quality control analysis of drugs at the national level, according to the Health Code approved in August of 1988. In 1988 and 1989, this compromise will mean an immediate and exaggerated demand of the Laboratory resources. MOH should carefully analyze this problem in particular, to accelerate the development of the Laboratory in accordance with the compromise acquired.

3.6.1 Accomplishments during the period.

The engineering firm contracted by AID has installed at present 46 (65.0%) of the 70 laboratory equipments available. It is in the middle of the process of installing and calibrating the rest of the equipment, since the Central Maintenance Department of MOH has made adequate the electric installation of the Laboratory and AID has purchased three power stabilizers.

The MSCI Biomedical Maintenance Advisor and the Central Maintenance Department of MOH have made the analysis of the equipment and installations needed to provide "soft" and demineralized water for the Laboratory. The Central Maintenance Department is building with PL-480 Funds, the exterior check point, designed by the Engineering Department of MOH.

MOH awarded its first contract for the local purchase of Laboratory reagents and culture media, which represents 60% of the reagents requested by the Laboratory. The Panamerican Health Organization has contributed with a donation of chemical substances of reference obtained from Apotekens Centrallaboratorium, Solna, Sweden, Reference Center of the World Health Organization. These acquisitions will partially solve the most delicate problem of the Laboratory, but it will be necessary to seek alternatives to purchase abroad the remaining of the reagents and chemical substances of reference.

Given the progress of the installation and calibration of the equipment of the laboratory and the in process purchase of laboratory materials, it is estimated that the Drug Quality Control Laboratory may start operating regularly, the first quarter of 1989.

The personnel of the Laboratory, actually made up of 5 graduates of Chemistry and Pharmacy, systematically participates in the inspection and identification of the drugs which enter the Central Warehouse. Likewise, it makes physical and chemical tests of limited form, due to the low availability of laboratory reagents and to the lack of installed electronic equipment. The Laboratory distributes a weekly report of the activities carried out.

In Annex 1 "Evaluation of achievement of goals and activities of the Project APSISA 1988", the progress of goals No. 10 to 15 related to the Drug Quality Control is presented.

3.6.2 Obstacles to maintain/extending beneficial results.

The lack of laboratory reagents and chemical substances of reference was the most important limiting problem for the operation of the Laboratory in 1988. The delay in the installation and calibration of the electronic equipment due to inefficient electric installation and lack of power stabilizers, and lack of adequate installations to provide "soft" and demineralized water for the laboratory also were restrictive factors for the complete operation of the Laboratory. It is expected that these problems will be solved during the first quarter of 1989, since actions for their solutions are in progress.

3.6.3 Recommended Future Activities

The need of Laboratory reagents and chemical substances of reference continues to be primary problem for the adequate operation of the Laboratory. MOH should earmark funds for their acquisition locally and abroad. The growing demand of control analysis of drug due to the compromise acquired by MOH before the National Council of Health will also mean the need of additional laboratory personnel. This situation requires the preparation of a detailed work plan in function of the human and material resources available.

The short term assistance of Dr. Maria del Carmen Becerril Martinez of the National Laboratory of Health of Mexico, planned for November of 1988, can be used to analyze the administrative and operational situation of the Laboratory and define possibilities for future cooperation.

Likewise, it is necessary to support the training of Laboratory personnel in complex techniques of chemical and microbiologic analysis, and of promoting the development of a system of preventive and corrective maintenance for the valuable laboratory equipment installed.

3.7 TRANSPORTATION

Substantial progress was made in institutionalizing the transportation programs and maintenance management systems begun under VISISA and improved during APSISA. The transportation Department, technically an appendage (with the hospital and central maintenance department) of the general services administration, will have a significant role in developing health care and MOH Services throughout El Salvador.

In addition to coordinating 4 regional transportation centers, shops and parts warehouses, the transportation department operates the only fully functional computerized cost (MASCI; vehicle management) system within the MOH. Two other non-computerized systems for preventive maintenance programs (PMP) and parts inventory management (PIMS) are in process of being designed, operational, and integrated into a MOH transportation budget.

The transportation objectives of APSISA are to assist improve quality, lower transportation unit costs, and increase the MOH transportation services available to deliver health care services. The main components of the strategy are to provide technical and management training, replace high cost obsolete vehicles, and improve work facilities (shops, parts, warehouses, and offices). By consistently lowering transportation unit costs and increasing the GOES operational budget, the MOH may eventually attain transportation operational budget self-sufficiency in the 1990's.

TRANSPORTATION PREVENTIVE MAINTENANCE SYSTEM (PMP)

The administrative indicators used to monitor the transportation preventive maintenance program are time and accuracy. A points classification was calculated for each of the 26 cost centers and is presented graphically at the Ministry of Health (MOH) Transportation Department Bulletin Board.

Only five of the 26 cost centers, had performance of less than 70% during the 1988, they are:

<u>COST CENTERS</u>	<u>SCORE</u>	<u>TREND</u>
PLANSABAR	67.00	No change
METROPOLITAN REGION	68.00	Improving
HOSPITAL BLOOM	62.50	No change
HOSPITAL PSIQUIATRICO	50.00	Worse
HOSPITAL AHUACHAPAN	60.00	No change

It is noteworthy that the 5 cost centers with the lowest performance scores are the cost centers with the highest transportation unit costs. The use of fuel quotas to control costs and performance is not effective in centers with their own fuel, budgets, such as PLANSABAR and the hospitals. Alternative management controls, may be needed in cost centers with consistently high costs and poor performance such as; PLANSABAR, Metropolitan Region and Ahuachapan.

Previous Page Blank

Preventive maintenance (PM) standards and schedules were prepared and distributed for the following new vehicles:

FORD F-600	Trucks
MERCEDES BENZ	Ambulances
TOYOTA LANDCRUISERS	Jeeps
CHEROKEE DIESEL	Jeeps
VESPA	Motorcycles
YAMAHA	Motorcycles

ACTION PLANS 1988 - 89

Goals and activities for the 1989 Action Plan and evaluation of 1988 plan were completed. The result of the 1988 evaluation indicated the goals and activities in which the transportation department did not manage transportation resources, were those with the lowest percent of completion. Specifically, little or no progress was made in;

<u>ACTIVITY (1988)</u>	<u>PERCENT</u>	<u>OBSERVATION</u>
3. Reduce percent of down vehicles	50%	Auditors and Corte de Cuentas are very slow to process obsolete vehicle disposals.
7. Systemize transportation parts inventory management (PIM)	20%	Corte de Cuentas removes kardex each 6 months Informática/data processing has a low priority for this activity
8. Construction of shop additions for diesel lab, alignments, brake re-lining, component rebuild, and parts warehouses.	30%	Purchasing Department has not obtained bids for the construction contracts.
11. Stock parts and tools for new 1988 vehicles		APSISA did not submit parts requests and purchasing dept. has not obtained quotes for any of the 17 lots of 1988 vehicle parts specified.
12. Operate the MOH Radio network		Legal problems with payments

The other 7 goals for the 1988 transportation action plan were completed or are on schedule. (see Annex 4).

Of 7 training courses specified in the 1988 Transportation Action Plan, only one was conducted, automotive electronics. Training needs with in the transportation division are significant and will remain so until the MOH and APSISA can complete the courses programmed in the 1989 Action Plan.

A progress report on the status of vehicle disposals was provided the Vice-minister by APSISA. The number one priority goal, in terms of transportation costs and efficiency is to follow through on the physical disposal of at least 109 vehicles (not to include the 35 vehicles requested for disposal in 1987). Top level management support will be required, to

streamline a process that historically has taken 9 months to over a year to complete.

The Matanzas facility electrical service was modernized, balanced, and increased capacity.

Shop and parts manuals for Jeep products were obtained and in-process of being photocopies and distributed. Progress was made in obtaining spanish translations for Jeep and Ford Truck Engine product shop manuals.

The alignment equipment was provisionally installed at Matanzas and spanish translations for the diesel injection lab obtained. This equipment and brake relining machines will be permanently installed once the shop module construction (activity 8, Action Plan 1989) are contracted and completed.

One of the most significant achievements was the partial equipping and transfer of the San Miguel Regional Transportation shop, warehouse, and office to the new facility purchased under VISISA. Quotes obtained for vehicle lifts needs to be awarded and installed early in 1989. It is noteworthy to indicate the transportation Department was the first organization within the MOH San Miguel (Eastern) Region to initiate the move. The transportation Department remains the only MOH Department occupying the extensive new facility, designed as the Regional MOH Center.

3.7.2 Obstacles to maintain/extending beneficial results

No vehicle disposal requests have left the MOH for the "Corte de Cuentas" as yet. The presentation by top level management of the legal documents to the Corte de Cuentas is needed to reduce the delays in obtaining the required signatures.

The "Corte de Cuentas" law of re-typing kardex cards every 6 months, needs to be reconsidered to an annual kardex system, if the parts inventory management (PIM) system is to be modernized and up to date.

Programs with their own fuel allocations such as PLANSABAR and some hospitals do not comply with transportation cost reporting requirements. Administrative controls will be needed to ensure high unit cost transportation programs cannot delay reporting costs.

Many of the forms for cost reporting (i.e. forms DT 101, DT 104, Kardex, etc.) are not being printed and reproduced by Servicios Auxiliares, in a reasonable amount of time, leading to loss of cost control information.

The 17 lots of parts submitted in June 1988 for 1988 vehicles have not been quoted. Extreme lead times of over 9 months and inability to obtain responsive quotes for the purchase of spare parts is the greatest obstacle to maintain transportation vehicles and improve maintenance management. A proposal to purchase spare parts, using PL 480 parts budget funds to establish a line of credit and contract unit prices, with the leading suppliers is being presented to the MOH, after approval by APSISA and HPN. The outcome of this fixed unit cost, parts contract is pending review by the MOH and Corte de Cuentas. It is the most practical solution to the evident parts procurement problem. An improved method to procure spare parts is the number two priority goal to achieve efficiency and cost reductions to MOH transportation Unit Costs.

3.7.3 Recommended Future Activities

An administrative monitoring report is in-process to follow up on vehicle disposals (in conjunction with APSISA, Ing. O. Osorios P.) until high cost, obsolete, and unsafe vehicles are removed from the MOH fleet.

Quarterly and annual transportation cost, maintenance management and parts information reports are to be provided to regional, hospital, program administrators. Analysis training, planning, and programing visits are to be scheduled quarterly during 1989.

Actual transportation cost, source documents need to be reconciled with authorized vehicle distribution, as a monitor of actual use versus authorized location of new vehicles.

A physical inventory of shop tools and equipment should be conducted as a basis for future tool and shop equipment specifications. The installation of electrical service, tools, shelves, and shop equipment (in particular; transformers in Santa Ana and vehicle lifts in San Miguel) remain a high priority to provide efficient operation of the San Miguel and Santa Ana Regional shop facilities.

Installation of additional shelves and classification of used parts is in process for all four transportation shops. Serious delays and budgetary short falls for parts procurement will make the use of used parts from disposed vehicles, a risky but necessary strategy to maintain the current level of transportation services within the MOH.

Terms of reference for a contract to develop a transportation administration manual were proposed to the APSISA Steering Committee. Given the level of investment and sophistication of the MOH transportation system, alternatives to be defined, so a decision can be made on how to institutionalize the significant achievements made in transportation administration.

Per request (memo APSISA), Oct. 1988, Ing. Osorio, Ing. Weiss) statistical criteria and repair cost estimates work sheets are being tested to prioritize repair vs. replace decisions in the future.

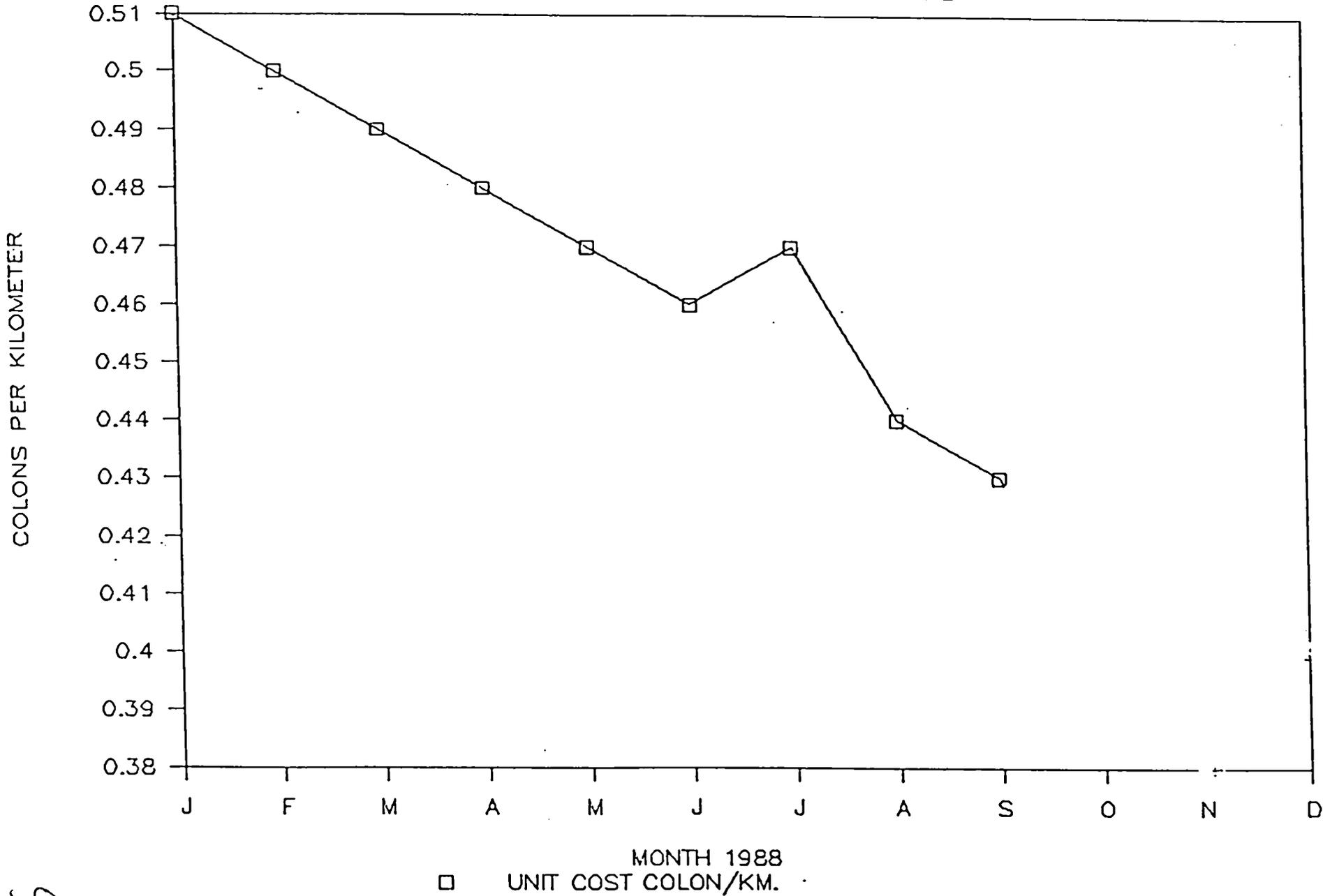
Direct technical assistance for parts warehouses and inventory management systems were approved and activities scheduled for november, 1988 to february 1989. A parts inventory management system (PIM), improved parts procurement and warehouse administration will be key components of the parts warehouse technical assistance to improve MOH transportation efficiency.

Improved parts procurement methods and inventory management will remain the major challenges to MOH transportation services until an improved procurement system is implemented.

FIGURE 1

MOH TRANSPORTATION UNIT COSTS 1988

AVG. DIRECT OPERATIONAL COST IN COLONS



415

3.8 MAINTENANCE OF BIOMEDICAL AND HOSPITAL EQUIPMENT

3.8.1 Accomplishments during the Period

Initial efforts of the Biomedical Equipment and Facilities maintenance Advisor were oriented to know the organization and functioning of the Department of Central Maintenance at Plantel San Esteban.

In January 1988, the Advisor attended orientation meeting of the APSISA's coordinating committee regarding the request to prepare the Annual Action Plan 1988 for the Department of Central Maintenance. This plan was reviewed by the APSISA's coordinating committee and approved with the following changes:

- a) The proposed objective to relocate the Department of Central Maintenance, located at the Plantel San Esteban, was deferred until next year.
- b) The plan for Contracting Maintenance Service for some Biomedical Equipment was modified to only include the X-Ray equipment.
- c) Additional Training courses were included for MOH approval, APSISA' coordination and for the final listing of courses to be sent to AID.

In the Annex 3 the APSISA Action Plan for 1988 is presented as well as a summary of the accomplished goals and activities.

The first goal, related to the MOH Technical Inventory System for the biomedical and hospital facilities equipment was delayed due to lack of personnel and transportation facilities at the Department of Central

Maintenance. However, a new strategy was recommended by the APSISA's coordinator group to conduct the inventory in coordination with the maintenance personnel of the Health Regions in the fourth quarter of 1988. A training activity for this personnel is under preparation to be accomplished in December 1988.

The computerized inventory listing of biomedical equipment developed under the 1986 VISISA Project was reviewed. The listing is 90% incomplete and with a large number of inconsistencies.

Plans are to elaborate the preventive program for selected basic biomedical and hospital equipment as soon as the inventory of this equipment is completed in 1989.

On the other hand, a survey to find out the availability of water and sewerage systems of the Units and Health Posts will be done during the taking of the equipment inventory.

A second goal, oriented to implement the preventive maintenance program for the biomedical equipment was initiated. Plans are to elaborate the preventive program for selected basic biomedical and hospital equipment, as soon as the inventory of this equipment is completed in 1989.

Collaboration was provided to the Drug Quality Control Laboratory to prepare in coordination with the Department of Central Maintenance, specifications for the equipment needed to supply "soft" and demineralized water to the Laboratory. Terms of references for the purchase of the equipment by AID were prepared. A sled to protect the equipment was designed by the MOH Engineering Department and constructed by the Department of Central Maintenance with materials acquired by APSISA/MOH with PL 480 funds. In addition, water distillers, vacuum pumps and voltage

regulators for the electronic equipment were also ordered.

Support was also given to the MOH Chief of the Central Laboratory for the pre-installation of biomedical and clinical laboratory equipment purchased under PIO/C 60250 of the APSISA Project.

During the months of August and September, 17 OHMEDA Vaporizers were installed in several of the country's hospitals. The replaced vaporizers were sent to Miami for regulation. This technical service does not yet exist in El Salvador, provides the immediate and secure use of the anesthesia equipments in the MOH hospitals.

A survey for Improving the electrical installations infrastructure and illumination of all the health unit of the Metropolitan Region was completed in coordination with the Department of the Central Maintenance. Acquisition of materials and plans to do the work for each unit is scheduled for 1989.

3.8.2 Obstacles to maintain/Extending beneficial results

Several activities were behind schedule due to the lack of human resources and the reduction of operational vehicles at the Department of Central maintenance. Physical facilities at the Department of Central Maintenance are inadequate, which do not allow any remodeling or new construction.

3.8.3. Recommended future activities

The technical inventory for the biomedical and hospital equipment throughout the country must be continued, as well as the elaboration of the

preventive maintenance program for selected basic equipment.

Collaboration to support the training activities for personnel from the health establishments and Regions should be encouraged on the use and operation of biomedical and hospital equipment.

A general purchasing and standarization plan for biomedical equipment and measuring equipment for maintenance, as well as for spare parts, materials and tools should be worked out with the Department of Central Maintenance.

3.9 MANAGEMENT INFORMATION SYSTEM

During the year significant progress was made in relation to the Management Information System (MIS). This system is the corner stone in the decision making process of the drugs and medical supplies procurement and distribution system.

The Management Information System play an important role in the strengthening the medical services offered by the Ministry of Health (MOH) at its various health establishments. As the system continues to develop it will play an even more important role in the efficient management of the limited resources available at the MOH for drugs and medical supplies.

3.9.1 Accomplishments during 1988.

During the year the Drugs and Medical Supplies Technical Unit, known by the Spanish acronym UTMIM, experienced several crisis. One of them was the resignation without previous notice of the programmer. At that time The system was not documented and was a complete mess. The remaining personnel was not able to run the system. In another instance the disk storage capacity, of the microcomputer installed at UTMIM, was completely used up.

This occurrences caused serious disturbances in the operations of the computerized system. During the previously mentioned situations, MSCI supported UTMIM allowing the system to continue its operations. The required reports were produced and the whole operations continued at an acceptable efficiency rate.

In the Annex 1 a summary of the accomplished goals and activities is presented.

The mechanized system was enhanced, some of the betterments were: the method used by the health establishments to report the drugs and medical supplies needs was modified. One of the main improvements was the creation of a validation report. In this report the informed needs of drugs and medical supplies were checked to insure their rationality; when an item failed the check it was listed for further investigation. This was done in a mechanized way and the report contained the items that were to be scrutinized. Two new reports were implemented, one indicated the twenty most expensive items based on total cost. The other showed the twenty most voluminous items based on units.

The program coding was optimized to improve the system through put. The programs were documented and in some extent an institutionalization of the system was accomplished.

Worked on the Drugs Inventory System basically at the Central Warehouse level. A new program was created to detect the inventory items without unit price. In order to make the physical inventory easier a new program was done, it prints the identifying information for each inventory item. This tool made the physical inventory much faster because there was a lot less to write. Also, some problems area were identified while taking the inventory. Some reports that were contemplated in the system are being produced and used by the Central Warehouse Management. Previously they were not produced or used.

It is important to mention the extraordinary cooperation received from Mr. Jose L. Azocar, MSCI Procurement Support Technicians in the Central Warehouse endeavor. He was a determining factor in obtaining the cooperation of the Central Warehouse personnel.

The electronic Data Processing Unit of the MOH received our support in several instances. We assist them in the determination of the adequate training for their technical personnel. There were no operations and programming standards, we supplied the first draft of such standards and basically were adopted.

Together with Mr. David Castro, from the Institutional Development Unit, worked on a standardized coding scheme for the different supplies catalogs of the MOH.

At the Planning Directory level, based on our suggestions, emphasis is being given to the coordination between the several electronic data processing advisors working at the MOH. The creation of the Electronic Data Processing Technical Committee came as a direct result of our effort. The Committee coordinates the work of all EDP advisors in the MOH. The proper coordination between all parties concerned is of paramount importance for the success of the computerization effort at the Ministry.

3.9.2 Obstacles to maintain extending beneficial results

Some situations were present that curtailed the accomplishments of this advisor that are as follows:

1. Distrust of the end users in the mechanization. This was evident at Central Warehouse and the Transportation Department. Apparently this attitude was caused by previous experiences with other consultants.
2. Improper or non existing documentation of the systems in use.
3. Limited technical personnel at the Electronic Data Processing Unit and the Institutional Development Unit of the MOH.
4. The violent situation of the country.

3.9.3 Recommended Future Activities

The MOH should start planning and/or working in the following areas:

1. Strengthen the Electronic Data Processing Unit and the Institutional Development Unit.
2. Implement a strong and close coordination of all entities related with data processing.
3. Start the planning to integrate all areas that are or are to be computerized. Presently the mechanization is being conducted in an isolated way.
4. Start the planification to establish local area networks and at a later time go to teleprocessing, this is the logical way to go.
5. Duly train the EDP technical personnel. Also, management should be familiarized with some EDP aspects. In relation to management training a seminar was developed and it will be offered soon.

4. COMPONENT "B" - IMPROVEMENT OF THE DELIVERY OF BASIC MEDICAL SERVICES

4.1 MALARIA CONTROL

The Malaria component efforts of the APSISA Project have been directed from the operational point of view, at a consolidation of the integrated control activities based upon to the priorities given by the epidemiological stratification of the problem. These activities mainly included support to the network of voluntary collaborators, training for malaria diagnosis, and the improvement of the epidemiological monitoring system.

Furthermore, efforts were made aimed at broadening the control methodology of the program by including the vector source reduction through permanent engineering works in the coastal areas where the illness is most prevalent. This with the purpose of achieving a reduced dependency on the use of insecticides by this program in the near future.

4.1.1 Accomplishments during the period

a. Epidemiological situation

The epidemiological situation has continued to improve throughout the year with a reduction of total number of cases reported, equal to 33% as compared to the same period of the previous year.

At the same time blood sampling was increased in 4% due, in part, to the improved support efforts and the training of the Volunteer Collaborators network (VC) who constitute the principal base of the information base of the information system of the program.

This data is important because the VC represents the passive collection type of such information system; with a reduction of total number of cases as was reported, a similar decrease in number of samples collected would be expected. The decrease in the number of P. falciparum, equivalent to 83% fewer cases during the current period as compared to 1987, is one of the most significant accomplishments of the program during the last two years because it has reached its lowest level in 28 years. This phenomenon could be considered an indicator of a reduction of transmission levels nationwide since this species characteristically does not produce relapses.

It is important to mention that the epidemiological situation of marked improvement reported, was observed in the entire country, and is not exclusive to a few isolated areas, which indicates a general tendency to reduction of transmission. This occurred in spite of the fact that this year's rainfall, was considered three times greater than last year, favoring a greater transmission. It is not possible, however, to single out in one reason for this improvement. This is due, in part, to the strategy of integration of combined control measures over the previous strategy of one principal measure based on the use of insecticides.

This change in strategy can be considered to a large degree reinforced by the APSISA Project's support providing the program with equipment, vehicles, insecticides, training and technical assistance, thus increasing the efficient use of the various control measures.

b. Vector source reduction projects:

During the period, continued support was provided to the national vector source reduction plan for the control of malaria through the design and execution of engineering works in the coastal area, primarily related to a higher transmission of the disease. This permitted completion of the final designs and the initiation of the construction at the Ticuiziapa estuary whose main purpose is to regulate the levels of water in the estuary preventing flooding of nearby lands, and consequently the formation of vector breeding sites. Technical and economic feasibility studies were also completed for the other two estuaries (Metalio and San Diego) that are now ready to continue with the development of their respective final designs before entering the construction of their works. These projects receive financial support through the PL-480, Title I funds, which are sought to contribute to a reduced use of insecticides by the program in the near future.

c. Training

The malaria control program through its personnel for the first time carried out one-day training and motivation seminars, aimed specifically at the volunteer collaborator of the program, emphasizing sample taking for diagnostic purposes and treating of cases. In this manner, 900 volunteer collaborators from the high priority malarious areas were trained. This activity, which is planned to continue until the 3,000 volunteers of the program are trained, is considered very successful and important because in addition to being an excellent example of primary health care with community participation, it contributes significantly to the institutionalization of the malaria program capabilities and thus of the Ministry of Health.

Another training area was directed at improving the capability for diagnosis within the program. A total of 40 microscopists were trained during two on-week courses. These microscopists are assigned to different health regions and are in the vicinity of the zones where malaria is considered highly endemic. Both courses were given by the Malaria Project Advisor. All of the microscopists trained were provided with new microscopes purchased with Project funds. This activity sought, by improving the diagnostic capability, to contribute to the reduction of time between the taking of a sample, the diagnosis, and finally the specific appropriate treatment to finally diminish transmission.

d. Control Measures

Of the three cycles programmed for a period longer than that covered by this report, one cycle was completed and the second one started. Using an intradomiciliary residual type insecticide (Propoxur), 33,000 households were sprayed in areas where the Anopheles albimanus still exhibits susceptibility to this insecticide and which are classified of highest priority according to the epidemiological stratification. Over 90% of the projected number of households were covered during the first cycle. The start of the second cycle, however, was delayed, owing to the late arrival of the insecticide shipment into the country.

Spraying operations at ULV ultra low volume using a pyrethroid (permetrina) were selectively carried out during the period of major transmission as a result of detection of high densities of adult mosquitoes in highly endemic areas.

Finally, larvacide applications (ABATE), were carried out during the dry season in approximately 200 breeding sites previously identified in these same highly endemic areas. These applications were in response to the detection of high densities of mosquito larvae in each of the sites.

The previously described measures illustrate the value placed on the program monitoring at the mentioned sites, and an immediate response, through a decentralized decision making process.

4.1.2 Recommended Future Activities

The computerized information system should be implemented to establish a faster and permanent epidemiological surveillance system that detect outbreaks of the illness in the higher risk areas.

Furthermore, this system should be the source for a continuous operational restratification of the epidemiological problem to permit reallocation of funds and application of control measures to high priority areas.

Large scale engineering works for the reduction of vector sources should be continued to complete all of the projected works. In addition a funding mechanism should be sought to support other smaller scale vector reduction works, specifically at those areas where it is not recommendable to use residual insecticides because of high resistance problems.

Training should be directed at all personnel of the different general health services, thus permitting in the near future, the integration of the malaria control activities into the health services.

In this aspect, it would be of great value to first carry out health services investigation studies to detect the specific needs of the general health service to carry out their new transferred malaria control activities.

5. CONCLUSIONS AND RECOMMENDATIONS

Brief comments on aspects favoring or limiting the development of MSCI Technical assistance are incorporated in this section. It is expected that this information help to improve the execution of the technical assistance of the APSISA Project in 1989.

5.1 Technical cooperation strategy

The strategy adopted by the APSISA Project to assure the effectiveness and continuity of the technical assistance given to the MOH was oriented to promote a proper coordination between the three principal participants - the MOH, USAID and the Technical Assistance (T.A.). This strategy was implemented by promoting individual and group involvement in the project management and in the development of organized Action Plans. To facilitate this participating approach, the Project established a Steering Committee headed by the Vice Ministry of Public Health and integrated by members of the MOH Technical Units, USAID and the Technical Assistance. The Technical Advisors were placed in the working area of their national counterpart for jointly programming, accomplishing and evaluating the project's goals and activities.

The strategy implied that both the T.A. and the national counterpart had good knowledge about the project objectives, organization and resources needed to help upgrade the technical and administrative aspects involved in the APSISA Project to support the health infrastructure development.

In retrospect, it has been possible to observe that some of the strategic basic elements were not properly accomplished. For example:

- a. The administrative and technical personnel of the MOH technical Units did not have, at the beginning of the project, sufficient information about the project objectives, available resources, working methodologies and indicators to measure its progress.
- b. The technical assistance, as a consequence, also confronted initial problems to accommodate themselves to the working methodology and strategy designed. This lack of coordination with the national counterpart conducted to elaborate general action plans with routinary and operational activities, and without adequately defining the counterpart responsibility in its development.

Some of these problems or deficiencies in planning were evident during the first MSCI progress evaluation meeting held in May-June and during the evaluation meeting of the accomplishment of goals and activities of the 1988 APSISA Action Plan held in October 1988.

From these evaluating experiences it was possible to reach the following recommendations:

1. The MSCI Technical Assistance, together with the national counterpart, should issue a detailed Annual Work Plan with specific goals and activities to be carried out. If needed, quarterly work plans should be prepared listing activities for accomplishing short term goals and pointing out the operative national counterpart who will participate in their realization.

2. Quarterly Progress Evaluation Meetings should be programmed to evaluate the performance of the T.A., to evaluate the progress made in the fulfillment of goals of the Action Plan and identify restrictions or limitations preventing its progress.
3. The APSISA Action Plan should be evaluated at least semestral to measure progress made on goals and activities, and identify the necessary changes to adjust the program to the resources available.

These recommendations will be more important to follow-up after June 1989 when a new public Health administration arrives after the presidential election.

5.2 Effective use of resources

One of the basic purposes of the APSISA Project is to strengthen the MOH logistic support system for selecting, acquiring, warehousing, distributing, and monitoring the drug and medical supplies needed to support basic health care services.

Government limitation in health expenditures, lack of a well defined MOH administrative and technical infrastructure, and poor policy decision to recruit, retain and promote health personnel are factors affecting the effective utilization of resources provided.

The success obtained in providing technical assistance to malaria and transportation, and the slow results obtained within the procurement and maintenance of biomedical equipment programs are good examples to support

the former statement. Malaria and Transportation are better organized Units than others at the MOH Central level. Even though the solution to those important problems is not directly related to the APSISA Project, some comments should be made for the MOH to focus attention and look for solution at the near future.

Government efforts should be encouraged by the Ministry of Public Health to get reallocation of public funds to support a strategy oriented to have an efficient administrative health infrastructure. Health is an outstanding problem for El Salvador and strong justification exists for its improvement.

The Ministry of Public Health must also look for technical assistance for structuring, as a first step, a system for the administration of salaries according to well defined administrative and technical requirements. Criteria for selecting and promoting personnel according to a job description is mandatory.

5.3 Lesson learned

There were several specific lessons learned from the implementation of the APSISA Project during this year, which will help to orient the MSCI technical assistance in the second year:

- a. The strategy adopted by the APSISA Project to assure the continuity of the technical assistance by promoting joint responsibility of the Advisor and the national counterparts for programming, accomplishing

and evaluating the project's goals and activities was effective.

Limitations or restrictions occurred specially at the beginning of the project, but they were overcome by improving the communication between both groups.

- b. Technical assistance seemed to be more effective when there was a good coordination between the MSCI Advisor and MOH Technical Units, and particularly when operative national counterparts were identified to accomplish specific tasks.
- c. Periodic internal evaluation to measure progress made on goals and activities and to adjust the Plan of Action were effective. This evaluation helped to review the fulfillment of goals and to identify restrictions or limitations preventing its progress.
- d. Establishing a good coordination and working collaboration through the Health Monitors at the Central, Regional and local levels was productive for promoting effective changes for drug warehousing and distribution. The link established by the Health Monitors providing valuable information helped to implement the drug distribution process from the Central to the Regional level, and from this to the local level.
- e. The most encouraging results were obtained in the Malaria and Transportation MOH Technical Units, due to the capability of the Advisor to pursue the specific goals and activities programmed and the existing effective organization and functioning of these Units.
- f. The purchasing of pharmaceuticals and medical supplies was speeded up when a better coordination between the Drug and Medical Supply Technical Units (UIMIM) and AID was established through the MSCI

Advisor. However, slow and bureaucratic operative procedures presented considerable administrative delay to expedite the acquisition process. Efforts will be made in the second year to correct this limitation.

AR-ENGL

RAC/zadeh

ANNEX 1 - Page 1
 ACCOMPLISHMENT OF GOALS AND ACTIVITIES, 1988
 HEALTH SYSTEMS SUPPORT PROJECT APSISA "A"
 AID CONTRACT No. 519-0308

MINISTRY OF PUBLIC HEALTH AND SOCIAL WELFARE (MOH)
 COMPONENT "A": LOGISTICS SUPPORT: DRUG ACQUISITION, DISTRIBUTION
 AND MANAGEMENT SYSTEM.

UNIT IN CHARGE: DRUGS AND MEDICAL SUPPLIES TECHNICAL UNIT (UTMIM)

ADVISOR'S NAMES:

- ARIAM GOMEZ - Clinical Pharmacologist
- JOSE L. AZOCAR - Procurement Support Technician
- FELIX VILLAMIL - Computer Advisor
- MAURICIO GUEVARA - Health Technical Assistant
- CESAR CROX AVENDAÑO - Health Technical Assistant
- MARIA LUISA PACHECO - Health Technical Assistant

No.	GOALS	PROGRAMMED ACTIVITIES	ANNUAL ACTIVITY COMPLETION	% OF GOALS COMPLETION AND OBSERVATIONS TO OCTOBER 30, 1988
1	Mechanize procedures to make drugs and medical supplies purchasing programs	<ul style="list-style-type: none"> a. Consolidate MOH's drugs and medical supplies monthly needs b. Consolidate annual needs for the health programs c. Consolidate stock supplies in the central and regional warehouses d. Update drugs list in local orders and imports e. Consolidate global lista of MOH's stock supplies and needs. f. Make purchasing lists: <ul style="list-style-type: none"> 1. MOH Purchases 2. AID Purchases 	<ul style="list-style-type: none"> 0 100 100 100 100 100 	<p>83.34</p> <p>Have not received drugs daily tabulators.</p>
2	Mechanize the tabulation process of the supervision survey on the use of the Essential Drug List.	<ul style="list-style-type: none"> a. Make computerized program b. Introduce data into the computer c. Tabulate data received d. Make diagrams e. File results 	<ul style="list-style-type: none"> 100 50 50 100 100 	<p>80.00</p> <p>Have only recorded 6 months because the supervision visits were cancelled.</p>

No.	G O A L S	PROGRAMMED ACTIVITIES	% OF ANNUAL ACTIVITY COMPLETION	% OF GOALS COMPLETION AND OBSERVATIONS TO OCTOBER 30, 1988
3	Mechanize the process to elaborate the drugs and medical supplies distribution charts.	a. Create a computerized program	100	100
		b. Consolidate information of the needs and stock supplies in the regions, hospitals and centers.	100	
		c. Make the distribution chart	100	
4	Train the UTMIM users on the use of the computer	a. Make a basic manual on the use of the computer	15	45.82 In process of being elaborated due to redesigning of the system by the new analyst.
		b. Make a list of computer programs	100	
		c. Practical training on the use of the computer	25	In process of being done, have only trained the operator.
5	Cooperate in the making and analysis of charts for the assignment of drugs to 14 hospitals and 5 health regions (Health Centers, Posts and Units)	Participate in administrative management for the drugs supply in the central warehouse.	100	100.00
		Participate in the making of the drugs and medical supplies distribution chart from the central level to the regions and hospitals.		
6	Cooperate with the administrative management to determine the drugs and medical supplies that will be requested as donations.	Participate in the analysis of drugs and medical supplies that will be received as donations.	0	25.00 A donations receiving project was made which to date is not official.
		Participate in the identification of donating organisms.	50	
		Classification of drugs to be requested as donations.	0	
		Standarization of the process for accepting donations.	50	

No.	GOALS	PROGRAMMED ACTIVITIES	% OF ANNUAL ACTIVITY COMPLETION	% OF GOALS COMPLETION AND OBSERVATIONS TO OCTOBER 30, 1988
7	Help out in the follow up and administrative control of the supply of drugs and medical supplies.	Supervise the distribution system of the regional level towards the rest of the health establishments.	50	75.0 A monitoring study of 100 health establishments at a national level were made by the UTMIM personnel.
		Supervise warehouses and pharmacies of the regional headquarters, hospitals, health centers, units and posts.	100	
8	Cooperate with the design and fulfillment of the organization and procedure for the MOH's medical supplies system.	Participate in the analysis on the use of drugs and identify areas of improvement and design strategies that will help the supply, distribution and use of drugs at a local and regional level.	40	67.00 A better coordination between warehouses, hospitals and health centers was promoted so as to exchange drugs and supplies for their usage and proficiency.
		Studies on the environmental conditions of the warehousing at a central, regional and hospital level.	80	Made a diagnosis of the situation
		Standarization of the warehousing and distribution system of supplies at all the MOH's health levels.	50	Were able to standarize the storing by the therapeutic groups.
		Design of the transportation logistics support system for the distribution of drugs	100	Distribution depends on the availabilidyt of transportation.
9	Cooperate in the administrative management of the timely supply of drugs and medical supplies to the hospitals and health regions (bimonthly)	Planning of dispatch routes, according to distribution charts, maximize the use of transportation, follow up and compliance with the bimonthly distribution schedule maintain inventories, updated control systems.		This is an operative activity, which was accomplished by the warehousing and distribution department.

No.	GOALS	PROGRAMMED ACTIVITIES	% OF ANNUAL ACTIVITY COMPLETION	% OF GOALS COMPLETION AND OBSERVATIONS TO OCTOBER 30, 1988
10	Begin analysis of the drug quality control of Essential Drug List (previous installation of equipment, purchase of reactives, materials, accessories, spare parts and bibliography). (The installation of equipment with AID funds, the rest with PL-480/88 funds)	<ol style="list-style-type: none"> 1. Bibliographical review 2. Choose the method of analysis 3. Prepare reactive solutions 4. Making of analysis 5. Make the report on the analysis 6. File the reports on the analysis 	<p>100</p> <p>100</p> <p>1</p> <p>40</p> <p>100</p> <p>100</p>	<p>73.50</p> <p>Progress has been limited due to the fact that the equipment has not been installed, lack of reactives, accessories, materials and spare parts (in process of local purchase) Physical analysis were initiated.</p>
11	Improve the level of knowledge of the drug quality control personnel to develop to its fullest the methods of analysis (1 scholarship financed with AID funds)	<p>Receive theoretical and practical training in the following areas:</p> <ol style="list-style-type: none"> 1. Sterility trials on injectables (microbiological analysis. 	0	<p>0</p> <p>Did not get scholarship in 1988.</p>
12.	Train pharmacists, doctors and nurses in the drug quality control of the supply system (AID funds)	<ol style="list-style-type: none"> 1. Organize a work-shop seminar 2. Recruit personnel to teach 3. Give the work shop seminar 	<p>100</p> <p>100</p> <p>0</p>	<p>66.66</p> <p>In process of organization</p>
13	Improve the drug inspection system (previous purchase of the necessary equipment, shelves and equipment for the handling of the warehouses, PL-480/88 funds). In the drugs receiving area.	<ol style="list-style-type: none"> 1. Make a list of the necessary equipment 2. Present the request to whoever it may concern 3. Train warehouse personnel in this area 	<p>100</p> <p>100</p> <p>25</p>	<p>75.00</p> <p>Lack of equipment for the inspection service</p>
14	Make the drugs analysis technical manual and their protocols.	<ol style="list-style-type: none"> 1. Bibliographical review 2. Translation of bibliography 3. Editing of the manual 	<p>100</p> <p>10</p> <p>10</p>	<p>40.00</p> <p>In the process of making the manual</p>

No.	GOALS	PROGRAMMED ACTIVITIES	% OF ANNUAL ACTIVITY COMPLETION	% OF GOALS COMPLETION AND OBSERVATIONS TO OCTOBER 30, 1988
15	Make the standards manual for the operation of the MOH's Drug Quality Control Laboratory.	<ol style="list-style-type: none"> 1. Visit foreign drugs quality control laboratories that have a similar organization to ours, to gather the necessary information 2. Take a course on the making of the standards from an expert in the area. 3. Investigate and study the existing standards in El Salvador, related to the drug quality control. 4. Editing of the drug quality control standards 	<p>0</p> <p>0</p> <p>100</p> <p>0</p>	<p>25.00</p> <p>Did not obtain the financing for the visits to foreign countries. The training in the making of the standards pending for November when HSCI advisor arrives.</p>
16	Put into operation the Drug Information Center (C.I.M.)	<ol style="list-style-type: none"> 1. Get to know the drugs information needs 2. Establish a drug data bank 3. Form a library with primary, secondary and tertiary sources of information on drugs. 4. Get a subscription to the IOWA Drug Information Service and/or the Drugdex 	<p>100</p> <p>75</p> <p>60</p> <p>50</p>	<p>Have ma level (San Rafael Hospital in Santa Tecla)</p> <p>Lack of bibliographical material and desk supplies.</p> <p>Have only 16 volumes and 20 OPS/OMS publications.</p> <p>Are only waiting for the OPS to send the microchips to the UTMIM.</p>
17	Publish a bimonthly informative bulletin of the Drugs Information Center (GOES funds)	<ol style="list-style-type: none"> 1. Establish and editing and contents cronogram 2. Establish costs and financing of the editing 3. Edit the bulletin 	<p>100</p> <p>0</p> <p>0</p>	<p>33.33</p> <p>Lack of financing</p>

26

No.	GOALS	PROGRAMMED ACTIVITIES	% OF ANNUAL ACTIVITY COMPLETION	% OF GOALS COMPLETION AND OBSERVATIONS TO OCTOBER 31, 1988
18	Train the personnel involved in the supply system (AID funds)	Optimize the use of drugs through workshop seminars	100	100.00 10 Technical sessions on the use of the Essential Drug List and the Therapeutic Formulary were held.
19	Review and updating of Essential Drug List and the Therapeutic Formulary.	Coordinate with the Technical Therapeutic Committee to updating with the possibility of drug inclusion or exclusion.	100	25.00 Available material for review, have summoned the Therapeutic Technical Committee for the first quarter 1989.
20	Make a drugs warehousing technical standards manual	Establish standards for the drug receiving, warehousing, distribution and final destination (at the regional and local level)	100	100 Coordinate with the Central Warehouse and MSCI Technical Advisory.

ANNEX 1

RAC/zadeh

ANNEX 2 - Page 1
 ACCOMPLISHMENT OF GOALS AND ACTIVITIES, 1988
 HEALTH SYSTEMS SUPPORT PROJECT APSISA "A"
 AID CONTRACT No. 519-0308

MINISTRY OF PUBLIC HEALTH AND SOCIAL WELFARE (MOH)
 COMPONENT "A": LOGISTICS SUPPORT: DRUG ACQUISITION,
 DISTRIBUTION AND MANAGEMENT SYSTEM
 UNIT IN CHARGE: OPERATIONAL PROGRAM AND WAREHOUSING AND DISTRIBUTION
 DEPARTMENT, PROCUREMENT DIVISION

ADVISOR'S NAMES:
 GLENN BLACK - Procurement Advisor
 JOSE L. AZOCAR - Procurement Support Technician

No.	G O A L S	PROGRAMMED ACTIVITIES	% OF ANNUAL ACTIVITY COMPLETION	% OF GOALS COMPLETION AND OBSERVATIONS TO OCTOBER 30, 1988
<u>PROGRAM OF OPERATIONS</u>				
1	Analyze the present acquisitions system and identify the way of modernizing it.	1. Gather the existing information 2. Analysis of the information gathered 3. Review of the compliance of the standards at an actual level (monitoring) 4. Review of the carrying out of the procedure at an actual level (monitoring) 5. Observations and suggestions for the modernizing	40% of all activities as a whole	To be congruent with the percentage assigned to the activities, the goals have been reached in that same percentage leaving what is left with the following distribution: Review of what has been done 10% Making of standards 20% Design of procedures 20% Procedures previous to the Institutionalization <u>10%</u> 60%
2	Making of a suppliers catalog with prospects towards and electronic processing.	1. Review of the existing information on this point. 2. Definition of the classification to be adopted. 3. Making and trial of a model 4. Design and trial of the program for the electronic processing.	10% of all activities as a whole	To the obtainment of this goal a 10% would be correspondent to be congruent to the percentage assigned to the activities dealt with, since the report presented is at an introductory level.

h/b

No.	GOALS	PROGRAMMED ACTIVITIES	% ANNUAL ACTIVITY COMPLETION	% OF GOALS COMPLETION AND OBSERVATIONS TO OCTOBER 30, 1988
3	<u>PURCHASES FOLLOW UP</u>	Methodology to make an effective follow up of purchases made through bids, so as to decrease delays, claims and fines.	<ol style="list-style-type: none"> 1. Diagnosis of the present situation 2. Design of standards, procedures, and to correct deficiencies. 3. Put into effect the standards, procedures and formats. 4. Review of supervision of the compliance (follow up) 	<p>Work to be done in 1989</p> <p>These activities not done.</p>
4	<u>RECEIVING</u>	Review of standards, procedures, and formats and their suitability to the conditions and requirements of the present.	<ol style="list-style-type: none"> 1. Gathering of information. 2. Review of the compliance of the standards at the field level. 3. Development of the procedures at an actual level. 4. Use of formats at an actual level 5. Suggestions towards the correction of deficiencies. 	<p><u>IMPORTANT NOTE:</u> At the beginning of the year, the Procurement Support Technician reported practically only to the UTMIM and to APSISA, it was not until Mr. Ricardo Amaya was hired as Head of Warehousing and Distribution Department that the Advisor had an exclusive counterpart.</p> <p>As to the job done it should be made clear that due to the fact that the Vice Minister of the Branch on March 25, 1988 integrated a Special Committee to study the problems related to the drug receiving area in the Central Warehouse, the Chief of the Warehouse and the corresponding Advisor did not continue with their programmed work, but dedicated to making actions tending to give an integral solution to the problem.</p>

6/20

No.	GOALS	PROGRAMMED ACTIVITIES	% OF ANNUAL ACTIVITY COMPLETION	% OF GOALS COMPLETION AND OBSERVATIONS TO OCTOBER 30, 1988
				<p>In such sense, they dedicated to take care of the actions recommended by the Special Committee which are guided towards the editing of standards, the design of procedures and the carrying out in reference to the drug receiving area. They also worked to the obtainment of the remodeling of the physical spaces, to improve the efficiency, both in the above mentioned area and the rest of the classic areas within a warehousing and distribution system (storing, distributing and registration).</p> <p>The making of the standards and the design of the procedure has been a joint job with the Institutional Development Unit of the MOH.</p>
5.	<u>WAREHOUSING</u>			
	Review of standards, procedures and formats and their suitability to the conditions and requirements of the present.	<ol style="list-style-type: none"> 1. Gathering of information 2. Review of the compliance of standards at a field level. 3. Development of the procedures at an actual level. 4. Use of formats at an actual level. 5. Suggestions towards the correction of deficiencies. 		
6.	<u>DISTRIBUTION</u>			
	Review of standards, procedures and formats and their suitability to the conditions and requirements of the present.	<ol style="list-style-type: none"> 1. Gathering of information 2. Review of the compliance of standards at a field level. 3. Development of the procedures at an actual level 4. Use of formats at an actual level. 5. Suggestions towards the correction of deficiencies. 		

98

No.	GOALS	PROGRAMMED ACTIVITIES	% OF ANNUAL ACTIVITY COMPLETION	% OF GOALS COMPLETION AND OBSERVATIONS TO OCTOBER 30, 1988
7.	Review standards, procedures and formats, and the mechanization of the Registration System.	<ol style="list-style-type: none"> 1. Gathering of information 2. Review of the compliance of standards at a field level. 3. Development of the procedures at an actual level. 4. Use of formats at an actual level. 5. Suggestions towards the correction of deficiencies. 		
	Kardex: Electronic processing			
	Indicators: Minimum maximum quantities, rotation of inventory, expirations.			
	Methodology: First entries, first discharges (PEPS)			
	DATA BASE: 50%			

ANNEX 2

RAC/zadeh

81

ANNEX 3 - Page 1
 ACCOMPLISHMENT OF GOALS AND ACTIVITIES, 1988
 HEALTH SYSTEMS SUPPORT PROJECT (APSISA) "A"
 AID CONTRACT No. 519-0308

MINISTRY OF PUBLIC HEALTH AND SOCIAL WELFARE (MOH)
 COMPONENT "A": LOGISTICS SUPPORT: BIOMEDICAL EQUIPMENT AND
 FACILITIES MAINTENANCE
 UNIT IN CHARGE: CENTRAL MAINTENANCE DEPARTMENT

ADVISOR'S NAME:
 RUBEN WORRELL - Biomedical Maintenance Advisor

No.	GOALS	PROGRAMMED ACTIVITIES	% OF ANNUAL ACTIVITY COMPLETION	% OF GOALS COMPLETION AND OBSERVATIONS TO OCTOBER 30, 1988
1.	Continue with the MOH technical inventory system for the biomedical and hospital facilities equipment throughout the country.	1. Continue the medical equipment inventory in the central, paracentral and western regions.	10%	10.5% activity behind schedule. Pending designation of the regional personal to receive the inventory training session.
		F:45		
		2. Begin the basic equipment inventory in hospitals and health centers.	10%	
		F:15		
2.	Preventive maintenance program for biomedical and hospital facilities equipment (basic equipment)	3. Follow up on the eastern and metropolitan regions inventory	15%	17.5% 1. Activity completed. 2. Activity incomplete due to the lack of physical resources and the inventory list of Goal 1.
		F:30		
		4. Process the information obtained to be used in the compliance of the specific objectives.	0%	
		F:10		
		1. Evaluate the stage begun in 1986 and interrupted in 1987, for key biomedical equipment.	100%	
		F:10		
		2. Continue the preventive maintenance program for key biomedical equipment.	10%	

"F" is the pondered factor or of weigh for the activity in reference to the goal.

No.	GOALS	PROGRAMMED ACTIVITIES	% OF ANNUAL ACTIVITY COMPLETION	% OF GOALS COMPLETION AND OBSERVATIONS TO OCTOBER 30, 1988
		F:60		
		3. Include in the preventive maintenance program the emergency plants, cold rooms and boilers.	5%	3. Activity incomplete due to the lack of physical resources and the inventory list of Goal 1.
3.	Improve the theoretical and practical level of knowledge of the maintenance technicians. Collaborate in the training of personnel, related directly with the use and operation of biomedical and hospital equipment (basic), to decrease the repairs due to bad handling and operation (AID funds)	1. Make a plan of training needs which includes the activities not done in 1987.	100%	33.75% 1. Activity completed.
		F:10		
		2. Coordinate and make together with the different units and MOH establishments, training of technicians (courses, talks, seminars, training in service, etc.) according to Goal 1.	35%	2. Activity behind schedule due to the delay of the approval of the 1988 Work Plan
		F:65		
		3. Coordinate and make together with the different units and establishments of MOH, the training of personnel who uses and operates the biomedical and hospital basic equipment (courses, talks, seminars, etc.)	0%	3. Activity behind schedule due to the delay of the approval of the 1988 Work Plan. This activity will be completed during the last quarter of 1988.
		F:15		
		4. Development of the technical documents center, classification, reproduction and rational distribution of the manuals (GOES funds)	10%	4. Activity incomplete due to the lack of financing
4.	Improvement of the corrective maintenance services.	F:10		
		1. Make a corrective maintenance of biomedical and hospital equipment, according to priorities established by the different health establishments	90%	1. Activity completed.

No.	GOALS	PROGRAMMED ACTIVITIES	% OF ANNUAL ACTIVITIES COMPLETION	% OF GOALS COMPLETION AND OBSERVATIONS TO OCTOBER 30, 1988
5.	Supervision of the preinstallations and installations of biomedical and hospital facilities equipment.	F:100	90%	Activity completed
		1. Supervise, control and receive the pre-installations and installations of the biomedical and hospital equipment that due to their complexity and especialization must be installed by private contractors.		
		F:60	90%	Activity completed
		2. Install the biomedical and hospital equipment that because of their characteristics can be made by the Ministry of Health's technicians. Install the equipment pending from 1987.		
6.	Administration of the maintenance services to obtain material resources and administrative reorganization of the Central Maintenance Department.	F:40	15%	57.5%
		1. Reorganize the administrative procedures to include requests, work orders, vehicle fleet and fuel control, also present statistics indicators.		1. Activity incomplete due to lack of physical resources. It needs more studying.
		F:50	100%	Activity completed
		2. Administrative the funds for local purchases (petty cash, PL-480/88), according to priorities		
7.	Supervision and follow up of contracts with private enterprises for different jobs and/or services related with the maintenance of the Rx equipment (AID funds)	F:50	100%	Activity completed
		1. Supervision of jobs by contracts for the correct compliance, such as Rx equipments.		
		F:70	100%	Activity completed
		2. Give the necessary technical suggestions to improve the services in general and in particular for the contracts.		

No.	G O A L S	PROGRAMMED ACTIVITIES	% OF ANNUAL ACTIVITY COMPLETION	% OF GOALS COMPLETION AND OBSERVATIONS TO OCTOBER 30, 1988
8.	Acquisition of biomedical equipment and measuring equipment for maintenance (AID funds) and spare parts, materials and tools (PL-480/88 funds)	F:30		
		1. Develop a general purchasing and standarization plan actual for the medical equipment available.	80%	64% Proceeding according to plan
		F:30		
		2. Establish the equipment to be bought, its spare parts and materials and also the tools and measuring equipment that will be necessary.	100%	Activity completed
		F:30		
		3. Develop operational procedures to continuously check the equipment that will be discontinued making sure that the necessary documents for their withdrawal and replacement are made.	0%	Activity postponed
9.	Improvement of the electrical installations infrastructure and illumination of all the health units of the Metropolitan Region (PL-480/88 and GOES funds)	F:20		
		1. Evaluate and obtain a census on the actual state of the needs for the correction of the electrical system and lighting of each health unit.	100%	45% Activity completed
		F:25		
		2. Based on goal 1 make a global list of electrical materials and human resources needed.	100%	Activity completed
		F:20		
		3. Process the acquisition of the materials, program the work to be done for each unit and their scheduling.	0%	Activity behind schedule
		F:20		
		4. Carry out according to schedule	0%	Activity will be done next year.

No.	G O A L S	PROGRAMMED ACTIVITIES	% OF ANNUAL ACTIVITY COMPLETION	% OF GOALS COMPLETION AND OBSERVATIONS TO OCTOBER 30, 1988
10.	Evaluation of potable water and sewage systems of the health units. (pumps, water tanks, and other equipment will be financed with AID funds)	<p style="text-align: center;">F:30</p> 1. Evaluation of the actual conditions and availability of resources for the water and sewage systems.	10%	10% Activity in process
		F:100		

ANNEX 3

RAC/zadeh

22

ANNEX 4
 APSISA PLAN OF ACTION, 1988
 EVALUATION OF ACCOMPLISHMENT OF GOALS AND ACTIVITIES
 HEALTH SYSTEMS SUPPORT PROJECT - APSISA "A"
 CONTRACT No. 519-0308

COMPONENT 1: IMPROVE REQUISITION, DISTRIBUTION AND MANAGEMENT SYSTEM - TRANSPORTATION DIVISION

ADVISOR'S NAME: HENRY J. WEISS - Transportation Advisor

Page 1 of 3

No.	GOALS	PROGRAMMED ACTIVITIES	% OF ANNUAL ACTIVITY COMPLETION	% OF GOAL COMPLETION AND OBSERVATIONS TO OCT. 30, 1988
1.	Develop and improve preventive maintenance program (PHP) for MOH Transportation Fleet.	Evaluate system Develop standards Develop schedules Reproduce forms	100% 100% 100% 68%	<u>68%</u> The preventive maintenance program (PHP) has standard routines implemented in all 4 regional MOH Transportation shop facilities. Need to expedite PHP form reproduction. PMP evaluations indicated <u>81.8%</u> index of completion. There is a good evaluation system in place but a lack of middle managers (Engineers and administrators) to analyze the results and implement improvements based on PMP information.
2.	Reach 85% effectiveness and punctuality in PMP reporting scores.	Implement administrative indicators Evaluate indicators Analyze results Recommend improvements	100% 100% in process	<u>81.8%</u>
3.	Reduce the age and percentage of unrepaired vehicles owned by MOH (Modernize MOH Transportation fleet)	Procure and distribute 1988 vehicles Dispose of uneconomical vehicles Specify 1989 vehicle procurement Improve vehicle repair vs. replace decision priority criteria.	100% 50% 20% 10% 10%	<u>40.7%</u> 117 vehicle disposal documents were approved by MOH, but waiting approval of "Corte de Cuentas". 1989 vehicle procurement is contingent on the physical disposal of these 117 vehicles. The extremely long process to dispose of obsolete government vehicles makes repair priority criteria difficult to establish. Fleet downtime is <u>40.7%</u> due to lack of obsolete vehicles disposals, poor parts procurement procedure, and lack of trained mechanics.

60

No.	GOALS	PROGRAMMED ACTIVITIES	% OF ANNUAL ACTIVITY COMPLETION	% OF GOAL COMPLETION AND OBSERVATIONS TO OCT. 30, 1988
4.	Maintain the computerized transportation information system (MASCII) throughout 26 MOH cost centers.	Receive cost and MP reports (inputs) Verify input data Data process cost inputs Evaluate cost and performance reports Recommendations for improvement	85% 85% 85% 80% 20%	<u>80%</u> Among 26 transportation cost centers; PLANSABAR, Metropolitan Region, Hospitals Ahuachapan and Bloom have performed poorly. Transportation cost data is verified, computer processed, and evaluated. There is a lack of authority and middle manager in the transportation Department to improve on areas of high cost. For example; the Transportation Department does <u>not</u> allocate fuel but is responsible for fuel cost accounting!
5.	Correct and improve computerized Transportation cost information system (MASCII).	Verify output as required information Define statistical, relation, graphics and other problems to information Dept. Effect corrections and improvements to system (MASCII). Develop a user's manual for transport administration.	100% 100% 0% 0%	<u>10%</u> Transportation computerized cost programs (MASCII) was explained to MOH computer Department. Computer Department is to obtain source code for MASCII dBase progress to be able to make corrections. Additional Transportation T.A. and terms of reference were specified to develop a Transportation Administration Manual.
6.	Develop programs to improve parts inventory and control.	Define terms of reference Improve storage, structure, and office areas in transportation warehouses.	25% in progr	<u>20%</u> T.A. approved, started on time November 7, 1988.
7.	Develop a computerized parts inventory management system.	Define system parameters and scope of work. Schedule project with informatica Department or private programming contractor.	20%	<u>10%</u> Meet with MOH Computer Department to define parameters to adapt existing medicine inventory MGT system for for Transportation parts inventory MGT system. Computer Department Head resigned January 1989, so outcome is pending.
8.	Construct, set up and remodel a. Alignment racks b. Brake re-lining facility c. Diesel injection laboratory d. Engine rebuild section e. Warehouse mezzanine f. Warehouses SW sector, Matazanos g. Air extractors in the IVU Warehouse	Submit design Solicit bids for construction contracts Award contracts Supervise contracts and set ups Budget for training employeess	100% 0%	<u>10%</u> Design completed for A - G. No bids taken or contracts awarded. Alignment racks (A) provisionally set up due to lack of space. Training budget approved in 1989 Action Plan. No designs or plan made for these air extractors (6) that were purchased under VISISA.

57

No.	GOALS	PROGRAMMED ACTIVITIES	% OF ANNUAL ACTIVITY COMPLETION	% OF GOALS COMPLETION AND OBSERVATIONS TO OCT. 30, 1988
9.	Combined with goal 8 in 1989 action plan.			
10.	Establish technical reference library in all regional transportation facilities.	Obtain, copy and distribute references Translate selected key references	60%	<u>60%</u>
11.	Specify tools and shop equipment to raise vehicle maintenance productivity.	Inventory existing tools Solicit and write specifications Procure (Purchasing Department) distribute and install.	60% 60%	<u>50%</u> Specifications are at HPN, budgeted under course # 7 of Transportation training action plan for 1989.
12.	Re-activated MOH radio communication network or consider sale of radios.	Evaluate resources and alternatives Cost analysis of alternatives.	0%	<u>0%</u>
13.	Observations	Approval of 1989 Action Plan.		Results of 1988 action plan evaluation indicated activities in which the transport Department did not manage the resources, had the lowest percent of completion. Specifically: Goal 3 depends on MOH auditors to approve obsolete vehicle and parts disposal. Goal 7 depends on the "Corte de Cuentas" to approve procedures that permit annual Kardex and/or computerized parts inventory system. Goal 8 depends on the Purchasing Dept. to take and award bids to construct. Goal 11 depends on the Purchasing Dept. to award quotes (often obtained by transport dept. due to delays) to procure parts and tools. Goal 12 depends on a policy decision at the Ministerial level to define priorities and the security risk of having radios in MOH vehicles, as well as a solution to legal problems resulting from payment disputes between the MOH and radio contractor.
14.	Anticipated problems:	Only 1 of the 7 transportation training courses approved in 1988 action plan was conducted. Training needs in the Transportation division are significant and will remain so until the MOH can manage the budget to complete the courses approved in the 1989 action plan. The alternative is to sell the fuel injection lab, alignment, engine, battery, and electrical component rebuild shop equipment and contract selected services to the private sector. This would require a major change in purchasing response time. Until replaced vehicles are disposed of and vehicle use restricted to health related transportation services there will be a significant shortfall in parts budget, skilled mechanics, supervisors and transportation cost administration. Total kilometers of transportation provided by MOH is rising at an increasing rate.		

ANNEX 5 - Page 1
 ACCOMPLISHMENT OF GOALS AND ACTIVITIES, 1988
 HEALTH SYSTEMS SUPPORT PROJECT APSISA "A"
 AID CONTRACT No. 519-0308

MINISTRY OF PUBLIC HEALTH AND SOCIAL WELFARE (MOH)
 COMPONENT "B": IMPROVEMENT OF THE DELIVERY OF THE HEALTH SERVICES - MALARIA
 UNIT IN CHARGE: MALARIA DEPARTMENT

ADVISOR'S NAME:
 DR. MAURICIO SAUERBRERY - Malaria Advisor

No.	GOALS	PROGRAMMED ACTIVITIES	% OF ANNUAL ACTIVITY COMPLETION	% OF GOALS COMPLETION AND OBSERVATIONS TO SEPTEMBER 30, 1988
1.	Make 99,033 inhouse sprayings (AID funds)	Integral spraying at 3 cycles per year in each home in a total of 33,000 homes located in the area susceptible to the insecticide.	64.6%	1. The amount of coverage obtained to date is satisfactory, eventhough there was a delay in the arrival of the insecticide, which was solved opportunely.
2.	Protect 194,038 dwellers with spaced sprayings at an ultra low volume insecticide (AID funds)	Spaced spraying in the environment to protect the population in the high risk area.	65.4%	2-3 Satisfactory amount of coverage.
3.	Make 15,960 spraying in and around the home with ultra low volume insecticide (AID funds)	Spaced spraying in and around the home	78.4%	
4.	Treatment of 485 breeding grounds with larvicide (AID funds)	Apply larvicide to positive breeding grounds in high risk locations.	54.8%	4-5 The larvicide applications were made during the dry season, which means at the beginning or end of the year. The completion of more than 54% of coverage is acceptable. The remaining 46% will be completed in the last quarter of the present year.
5.	Construction of 15 small drainage works (GOES funds)	Construction of small channels for the evacuation of stagnant waters in the high risk areas.	60.0%	
6.	Maintenance of 86 physical works for vector source reduction control made in previous years (GOES funds)	Cleaning, adjustment and sanitation of the works.	105.6%	6 The increase of this activity is due to the heavy rainy season, however, with the help of the communities and our personnel were able to develop these activities.

ap

No.	G O A L S	PROGRAMMED ACTIVITIES	% OF ANNUAL ACTIVITY COMPLETION	% OF GOALS COMPLETION AND OBSERVATIONS TO SEPTEMBER 30, 1988
7.	Coverage of 338,977 dwellers in high risk areas with antimalaria treatments. (GOES funds)	The treatments are done in entire communities resisting the appearance of epidemic outbreaks.	51.6%	7 Amount of coverage is satisfactory, since a great part of the high risk population is found in the traditional malaria areas.
8.	Cover 334,900 feverish persons at a national level (GOES funds)	The treatments will be given individually to feverish persons who request them through the Volunteer Collaborators.	30.2%	8-9 Thanks to the application of the integrated and efficient attack measures, the malaria problem continues with a decrease tendency. This coverage obeys a reality of less positivity found, which translates into an ideal evolution.
9.	Medicate 18,000 positive ill people with proved malaria (GOES funds)	Treatments will be given to people that have proved malaria through the laboratory.	28.6%	
10.	Take and test 338,977 blood samples (GOES funds)	Blood samples will be taken and tested from feverish people who are suspected to have malaria.	43.5%	10 As the malaria positiveness decreases at a national level, the blood detection is reduced spontaneously since the population does not feel the effects of the problem; nevertheless, the percentage obtained are adequate.

* Activities done up to September 1988

LIST OF PERSONNEL - MEDICAL SERVICE CORPORATION INTERNATIONAL (MSCI)HEALTH SYSTEM SUPPORT PROJECT (APSISA) "A"

ADVISORS	ACTIVITIES	NATIONAL COUNTERPARTS
A. LONG TERM ADVISORS		
RAFAEL A. CEDILLOS Chief of Party/Health Planner	Coordination and Supervision Health Systems Support	- Director, Planning Office - APSISA/MOH
ARTURO WALDRON I. Logistic Manager/Systems Advisor	Supply Management (Drug and Medical Supplies acquisition, warehousing and distribution)	- Administrative Director - Chief, UTMIM - Chief, Institutional Development Unit (UDI)
GLENN BLACK Procurement Advisor	Strengthening the capacity and effectiveness of the MOH Procurement system (drug and medical supplies)	- Chief, Procurement Division
ARIAM GOMEZ Clinical Pharmacology Advisor	Selection, acquisition and use of drugs Review the Essential Drug List and the Therapeutic Formulary, norms and treatment.	- Chief, UTMIM
JOSE LUIS AZOCAR Procurement Support Technician	Reception, warehousing and distribution of drugs.	- Chief, Warehousing and Distribution Department
RUBEN WORRELL Biomedical Maintenance Advisor	Inventory and preventive maintenance of Biomedical and Hospital equipment.	- Chief, Central Maintenance Department - Administrative Director
FELIX M. VILLAMIL Computer System Advisor	Automated information and processing capabilities (drug and medical supplies, biomedical equipment, procurement and transportation management).	- Chief, Informatic Unit - Chief, UDI
MAURICIO SAUERBREY Malaria Advisor	Malaria control and surveillance	- Chief, Malaria Department

ADVISORS	ACTIVITIES	NATIONAL COUNTERPARTS
B. <u>SHORT TERM CONSULTANTS</u>		
HENRY J. WEISS Transportation Advisor	Support Preventive and corrective maintenance programs * Implementation of Transportation cost administration system * Improvements to computer programs * Specify and program procurement required for fleet modernization.	- Chief, Transportation
C. <u>TECHNICAL SUPPORT PERSONNEL</u>		
HEALTH MONITORS (3) Mauricio Guevara Jose Cesar Crox Avendano Maria Luisa Pacheco	Supply management (logistic support for drug distribution distribution and warehousing)	- Chief, UTMIM
D. <u>ADMINISTRATIVE SUPPORT PERSONNEL</u>		
ROSA MARIA QUINTEROS	Administrative Officer	
ZOILA AMADA DE HUEZO	Secretary	
SILVIA PATRICIA FIGUEROA	Receptionist/Secretary	
MARIO A. GOCHEZ	Driver	
JOSE ANTONIO VILLANUEVA	Guard	
GLORIA ARGENTINA LOPEZ	Cleaning Maid	

ARTAB2

zadeh-

CA