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**EL SALVADOR:
Health Facilities
Rehabilitation Assessment**

**USAID/San Salvador
December, 1986**

**Resources for
Child Health
Project**

REACH



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EL SALVADOR: HEALTH FACILITIES REHABILITATION ASSESSMENT

USAID/San Salvador

- i. POST-EARTHQUAKE ASSESSMENT VISIT FOR ASSISTANCE IN PLANNING A COMPREHENSIVE HEALTH CARE SYSTEM FOR THE METROPOLITAN AREA OF SAN SALVADOR, EL SALVADOR**

Sophie C. Koch-Weser

- ii. CONTRIBUTIONS TO REHABILITATE THE EARTHQUAKE-DAMAGED PUBLIC HEALTH CARE SYSTEM OF EL SALVADOR AND TO THE PLANNING OF A COMPREHENSIVE HEALTH CARE SYSTEM FOR THE METROPOLITAN REGION OF SAN SALVADOR**

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FOREWORD

In the aftermath of a major earthquake that hit San Salvador on October 10, 1986, the Pan American Health Organization (PAHO), in collaboration with USAID/San Salvador, assembled a team of technical experts to assist the Ministry of Health in assessing reconstruction needs of the health facilities network around the metropolitan San Salvador area. The specific goal of the team was to produce a global reconstruction plan to restore the functional capabilities of the health facilities as well as affect changes which will improve current provision of services to the public.

The Resources for Child Health (REACH) Project provided two team members Ms. Sophie Koch-Weser, health facilities planner, and Dr. John Fiedler, economist. The following pages include both of their reports, which provide their findings on the current situation of the health system in operation, and their contributions to the overall plan. Please note that these are only segments of a larger product. Specific questions about the complete reconstruction plan should be directed to the Pan American Health Organization.

POST-EARTHQUAKE ASSESSMENT VISIT IN RESPONSE TO A REQUEST FOR
ASSISTANCE IN PLANNING A COMPREHENSIVE HEALTH CARE SYSTEM FOR
THE METROPOLITAN AREA OF SAN SALVADOR, EL SALVADOR.

December 6 - 15, 1986

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1. Patricia Sue Gibson, Deputy Chief, HR/OA
2. Kevin Armstrong, HR/OA
3. Aldo Miranda, Engineer from sub-contractor H.I.D.
(Health Information Design) to A.I.D.
4. Jack Fiedler, Economist Consultant from Birch & Davis
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1. Dr. Raul Paredes López, PAHO Representative to E.S.
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3. Ing. Victor Pou-Howley, Engineer of PAHO Team
4. Arch. Eduardo Robiero, Architect of PAHO Team

11. EXECUTIVE SUMMARY

Shortly after the earthquake of October 10, 1986 the Government of El Salvador turned to the Pan American Health Organization and the International Development Bank for assistance in assessing the damage to health facilities in San Salvador and possible loans for reconstruction. Shortly thereafter the Bank (BID) requested that oversight and additional technical assistance be given to PAHO, so that a consensus could be reached on the quality and quantity of assistance required, through the Agency for International Development.

By October 31, 1986 the AID had submitted a Memorandum, identifying requirements by the various hospitals and suggesting temporary quonset-type buildings for the most urgent health-care activities, which had experienced total destruction; the purpose at the time was to furnish as quickly as possible shelters for two of the three hospitals belonging to the Ministry of Health of El Salvador. At the same time a PAHO-Group, headed by Dr. H. de Moraes Novaes, had concluded its first site visit to San Salvador and prepared a Memorandum on its findings. This visit, from October 27th to November 5th 1986, was followed by another one which lasted from November 17th until November 26th 1986, and resulted in another written report. Both aforementioned Memoranda indicated that the PAHO-team was proceeding on a totally different course from that which AID had been proposing in its earlier statements of findings.

On November 14, 1986 Dr. Raul Paredes Lopez, the Representative for PAHO to El Salvador, wrote to Ms. Patricia Sue Gibson, AID Deputy Chief for Human Resources and Humanitarian Assistance in El Salvador, attaching to his letter for technical assistance request, an outline for a proposed plan, which clearly indicates that a review

of the entire health care system in San Salvador is required before actual construction or reconstruction projects are contemplated. By November 16th 1986 a telegram from the American Embassy in El Salvador had been sent to the US State Department, urgently requesting technical assistance experts to join the PAHO-team in their efforts to prepare a network of health care services and facilities, so as to decentralize a system within the greater San Salvador Metropolitan Area which had been allowed to become too concentrated, even before the earthquake had occurred. The Embassy in its telegram endorsed this approach and urged travel allowance for one to two experts in health care economics and health care facilities planning.

Due to new visa requirements for travel to El Salvador and other restraints, the technical assistance experts could not undertake their travel until December 6th and 8th respectively. The PAHO-team, consisting of two hospital administrators, one Engineer, one Architect and the assistance of a temporary Structural Engineer (conversant with Earthquake design) had already been at work for a month. This made the AID-selected experts' entrance into the planning effort quite late and, possibly, a little less effective than could be hoped. Cost effectiveness studies had to follow already fairly well-defined planning proposals by the PAHO-team. A Master Plan by PAHO was submitted to the Ministry of Health on December 12th 1986 for review, but without prior review by AID; early delineated material was offered to AID's consultants and a favorable impression was written by one of them. AID was to receive a copy of the Master Plan by PAHO during the week of December 15th 1986 from the Ministry of Health for review during the Christmas-New Years recess (December 14, 1986 - January 6, 1987).

The report by this consultant will contain her impressions

of some site visits to health care facilities; previous reports by other consultants; statistical data of past efforts to provide a health network through construction of facilities; and reactions to some planning by the Ministry of Health and the immediate steps proposed by the PAHO-team. The comments and suggestions are based in part on verbal information, and thus must be read with full acknowledgement, that assumptions were made where details could not be checked out. Another aspect, which must be kept in mind, is that past performance of the Ministry of Health for its health care facilities was frequently "donor driven"; that means, undertakings were motivated by the purposes for which donations were received rather than by actual need assessments. This stands out as one of the greatest mistakes of the past, is unrelated to the Earthquake damage, and gives particularly strong impetus to the recent PAHO suggestions, which highlight the chance to begin anew on a far more promising plan.

The key findings include the following facts:

Five of San Salvador's largest hospitals are concentrated in the center of the city and all lie on major fault lines of a nearby volcano.

The ground in that area consists mainly of volcanic ash and thus requires extra-ordinary attention to structural provisions against earthquake damage, which is not reflected in the designs of the buildings.

Belief among the populace, that the best medical care can be had only in this centralized area of the metropolis, draws more patients from outside the area than a decentralized system would do.

The specialization in hospitals prevents an integrated service from being offered and the power of the specialty-physicians denies a swing-bed usage, resulting in over-populating some nursing

III) continued

units and empty beds in other nursing units.

Antiquated hospital design further stresses the staffing efficiency by lengthening travel distances for provisions and nursing care.

Antiquated methods of separating not only specialty unit from one another, but separating them again based on sexual identity, impacts space use and thus efficiency.

A lack of sufficient utility lines within the structures and provision for emergency support are evident.

Uses of materials at construction time indicate little regard for operating and maintenance expenditures.

Budgeting for operations and maintenance is inadequate and is revealed in the conditions of the facilities, regardless of age.

Reliance on "patronatas" (similar to volunteer workers in American Hospitals) and their fee-collections from patients provide the only resources for new linen, towels, drapes and similar house-keeping items; this results in unequal services in the Ministry's facilities. Also, "patronatas" represent local elite citizens in the form of boards, which wield enormous power, but are not necessarily in tune with the community's citizens.

Except for a stepped-up effort by AID during the post-Earthquake weeks, during which a drug distribution system was activated, supplies of all kinds are usually lacking in the health centers in particular.

The International Development Bank funded many health centers after 1974, when a report indicated that needs which were perceived through-out El Salvador could be staffed and serviced through a training program; however, operational and maintenance requirements were not funded and, to make matters worse, the civil war and other earth-

II: continued

quakes (1965 and 1980) were not considered. The closing of Medical Schools due to student strikes added to the staffing problems.

Medical staffing in health centers relies solely on residents, who must after graduation provide two years of service before they are allowed to practice. The average time per day these physicians allocate for such services is between 2 and 4 hours. Judging by the over-populated waiting rooms in health centers, this condition either leaves many patients unattended or the time spent can hardly amount to more than 5 minutes. Data confirming this statement are not available.

As a result of these key findings, the recommendations prepared by the PAHO-team - although not comprehensive enough - address some major weak points by suggesting the following:

Out-Patient facilities should operate with medical supervision atleast 12 hours per day, and health centers should be grouped around general secondary hospitals, which should be located in zones serving approximately 200,000 people.

There should be three zones within the Metropolitan Area, taking into account existing facilities which are provided by other than Ministry of Health entities (Military; Social Services, also known as ISSS; and ANTEL, which is the Salvadoran Telephone and Communications Company; as well as private practitioners' clinics). The Ministry of Health would have three new hospitals, with each four to five health centers in its zone, thereby decentralizing the services and providing more direct access to each community. To the East of San Salvador's Metropolitan area a future additional zone and another to the North is also anticipated.

Minor expenditures for rehabilitation of damaged hospitals is suggested, so that health care can be provided during the

coming two years, while programming and development for construction of these new units can take place. Health Centers, which presently exist and were only slightly damaged, should - if the plan calls for it - be repaired for use within appropriate zones. Rented facilities, which exist to-day, should be replaced entirely with new ones. Data showing which ones are classified to be replaced, to be repaired or to be relocated as new facilities are contained in the PAHO-team's Master Plan, but were unavailable to this consultant then and now.

A tightly organized CPM (Critical Path Method) was outlined and shall have its beginnings on January 6th 1987. Many different activities are listed as running concurrently, allowing for an early June 1987 design and construction phase for the new units. The completion of all construction within the three zones is anticipated for Spring 1989. Assignment of functions for all participants in this program is to be made on January 6th 1987. Unless AID and BID have had an opportunity to review the details of the Master Plan during a long holiday period, this date seems optimistic.

In the meantime AID has been active in its continuing program of installing emergency generators, transformers, and x-ray equipment, as well as providing warehouses for drug storage. The earlier plans to provide quonset-type structures in open areas for operating suites and x-ray facilities have not met with local enthusiasm, and they are not considered at all appropriate by this consultant, in spite of the timeliness that is offered by these means. The required ventilation, sterility and utilities that such activities must have cannot be met by quonset-type buildings. The cost of equipment so exceeds the cost of the building, that it represents false economy; also, the movement of patients and staff into and from these shelters is made unsafe and

II. continued

unsanitary. The buildings cannot easily be linked to parts of the existing hospitals and create logistics problems for material and supplies, such as laundry and central sterile supply centers.

The out-standing conflict which existed between PAHO's and AID's approach to resolving the Earthquake damage and restoration activities was pronounced; AID favored a fast and inexpensive approach, while PAHO favored a long-term, comprehensive plan of action which would prevent the Ministry of Health from making the same mistakes of the past, while building on a new (not to be confused with luxurious,) and well designed plan. However, the telegram from the American Embassy in San Salvador to the Department of State in Washington, D.C. clearly describes an undertaking based on the PAHO-team's ideas. This consultant found this divergence of opinions unhelpful and quite restraining. It is hoped that subsequent review of the Master Plan and discussions can resolve this problem, so that with certain corrections a modified PAHO plan can be undertaken.

It is also important to note here, that during the time of this consultant's visit to San Salvador many millions of dollars of aid were about to arrive from Italy, West Germany and France for construction of hospitals. This fact was heralded in local papers and again threatened to establish a " donor driven " atmosphere of hasty construction of specialty hospitals (specifically a Cardio-Vascular and a Rehabilitation Hospital), deemed necessary by the local physicians who represent a rather powerful elite. Unless these funds can be incorporated into a carefully balanced and comprehensive health care plan of action, the repetition of competing interests in this area will result in over-specialization without attention to the communities' actual needs.

III. ACKNOWLEDGEMENTS

The consultant of this report would like to acknowledge in particular the assistance and information received from AID's (Morales) Architect/Engineer with H. I. D. and sub-contractor to AID) his experience with local construction techniques and knowledge of costs in construction were most helpful.

Special appreciation and gratitude must be expressed to the AID's team and certain members of the Ministry of Health (MOH) for their welcome and willingness to share information, in spite of our delayed arrival in San Salvador and the handicap which was thus presented for our contribution to be effective. To Dr. H. de Morales Novales my thanks for introducing us immediately to the overall thinking and planning which had already taken place; my thanks, too, to Ing. Victor Pou-Howley for giving us the opportunity to touch base several times after the introductory session and for providing copies of the basic plans on which the Master Plan would be based. To Director of Health Planning, Dr. Hugo Moran Quijada, my gratitude for explaining the MOH's plans regarding restoration plans at Rosales Hospital.

Without the secretarial staff at the AID offices, which assisted in travel arrangements and mailings, providing telephone numbers and similar information, our visit would have been totally unproductive; to them I should also like to express my grateful acknowledgement.

17) PURPOSE OF VISIT

At about midday, prior to starting the journey to El Salvador, a health center was located, an already formed table was set up, and a list of health care facilities planning to be added was prepared. At the time, details of the work to be done in the field, that is, assessment and construction, were not known. In San Salvador, I was presented with information from the AID office that appeared to be quite different. It included a report concerning the drug distribution reduction of a few units from damaged sites to still functioning hospital sites, and the installation of a water line and a telemedical equipment workshop. In district-type housing were three operations, as it seemed. A site visit to examine damaged health centers was not arranged, despite these facts I was able to view atleast from the outside the major hospitals of San Salvador, when an old acquaintance from San Salvador, drove me to these places. Later, the Ministry of Health offered us travel to two out-lying hospitals, Health Center San Bartolo and Hospital San Raphael at Santa Teluca, these were, however, only of interest in that they clearly indicated how the future should not imitate the past. Towards the end of our visit, we visited a Health Unit in the neighborhood of the AID compound, Health Unit Barrio, it was one of those, that was not damaged by the quake but afforded insite into the activities and services offered by such Health Units.

As the days went by, it was possible to find in the various files and closets of the HU/HA offices of AID some material of the recent past, which were most helpful in providing guidance concerning efforts that had been made to correct sub-standard conditions in the hospitals and health centers in the past. It became evident, that those earlier attempts were negated in large part by the civil war and its attendant complications.

IV. continued

What we discovered was that the health system provided by the Ministry of Health is based on varying degrees of sizes in facilities; starting with the smallest, a health post, proceeding to a health unit, and to a health center, which is a health unit with beds, and finally to a hospital-sized facility. Since 1974 there had been an effort to reduce reliance by the population on centralized hospitals by providing more health units outside the larger Metropolitan San Salvador area. A combination of lack of staff and the perception by the communities that real physician in-put was not there, however, made these attempts to decentralize futile. In any event, we were not permitted to view the majority of 53 health units in the country-side because of the unsettled conditions. It is safe to say, that such on site visits would not have been particularly helpful in any event. Thus, it seemed more profitable to join the resolution to which the PAHO-team had already come :to concentrate on decentralizing health care services within San Salvador, so as to provide zoning of community health care and de-magnetize the tertiary care centers which had been damaged and which were thus unable to provide quantitatively for the same population. The question was posed, whether the same number of beds in existence should be replaced or whether a reduction in total beds should be provided for secondary in-patient care, leaving for the future some number of tertiary care beds in a centralized facility. In other words, it was agreed that reconstruction of several hospitals in a highly earthquake-damage prone area was not advisable, and that the recent quake had provided the opportunity for re-examination of a system. Each zone therefore was to serve a community of 200,000 population with a 200-bed general care hospital and four to five health centers.

IV. continued

PAHO-team determined that the population served by MOH should be estimated at 600,000 in San Salvador for general care. This resulted in three zones; and an additional two zones, one to the North and one to the East, were indicated, since those seem to be directions in which the Metropolitan area is expanding rapidly. No mention was made at the time of two hospitals, one being a Tuberculosis Hospital and the other a Mental Health Hospital. It would have been profitable to inspect same, so as to determine whether they might be put to better use. Especially since drugs developed since the early 60's make Tuberculosis hospitals an anachronism, funding and operating such structures may not be economically justifiable. Such considerations seem not to have played a role in the development of PAHO's Master Plan, since its fundamental goal is to quickly erect three 200-bed hospitals, five new health units, and to repair six existing health units, as well as to construct eight new ones for those that are presently housed in rental spaces. This plan calls for two years of intensive efforts in planning, design and construction to relieve the burden on Hospital Rosales, Bloom, and Maternity. Early cost estimates are based on \$ 30,000.- per bed for construction and an additional \$ 15,000.- per bed for equipment. Since so much of these cost estimates can be altered by efficient design, we prefer a square footage price of \$ 350.-/s.m. for health units and \$ 650.-/s.m. for hospitals. These latter figures are assumed to include all Group I equipment, i.e. fixed equipment which requires tie-ins to utility lines. Careful planning is also required in the selection of equipment, so that training for maintenance and operations and relevant staff is efficient and cost-effective. Also, new health units should be based on a design that will serve a neighborhood of 40,000 people with the flexibility for growth to 60,000.

IV. continued

Since the completed first draft of the Master Plan was not available before my departure from San Salvador, I was not able to review the recommendations contained there in for AID; this fact, I believe, was one of the most troubling facts to come out of my travel. PAHO's schedule early on indicated a resumption of work on this project for January 6th 1987; it must be assumed AID and others have been reviewing the material during the interim period. However, this is based on the assumption, that - unlike the PAHO-team - they were all working during the holiday season.

Looking back on the experience that I had in San Salvador and the original request for technical assistance, I believe that the purpose for the trip was not well served at the proper time and that assistance during the planning phases in the coming months will be much more profitable. The positive aspect of my trip is and remains the experience I had to familiarize myself with the conditions in San Salvador, the people in the PAHO and MOH agencies, as well as AID's personnel in HU/HA. Conversations with individuals who have served in El Salvador under AID auspices have confirmed my belief, that help through grants to the Government has not always fitted into an overall scheme, if such a plan ever existed. This time, however, an unusual condition does exist to support a rather comprehensive planning effort, assuming the Master Plan was acceptable to the Ministry of Health. Obviously, further in-depth studies are required as PAHO's plan is activated, corrected and made relevant to conditions among health care providers and health care seekers in San Salvador. It is important to note, that 10% of the population is served by the private sector, 15 % by the Social Security System, and 75% by the Ministry of Health. The effect of an MHO health care system must reflect acknowledgement of other contributors.

IV. continued

Any future involvements in assistance should be accompanied by timely visa-applications, co-ordinated schedules with PAHO, assembly of background data by subject matter for consultants, and specific guidelines for in-put by specialty consultants that address the particular problem which was assigned. Local AID offices should assign a person solely for the purpose of assisting, co-ordinating and surveying the work of consultants, so that other programs and their needs do not have to be sacrificed. Schedules should be arranged between PAHO and AID ahead of time, so that work can progress simultaneously between the experts from each group. Contacts with the Ministry of Health should be attended by all team members, so that reactions and commentary are heard by all participants. In a sense, these actions were all anticipated by this consultant at her arrival in San Salvador, but were not in place and contributed to a haphazard approach with much lost time.

V. BACKGROUND

El Salvador, a country of approximately 4,800,000 population has suffered disastrously since the seventies from the ravages of a civil war and historically from earthquakes. Its economy is suffering, unemployment is rampant, and imports have been restricted. Formerly the country was able to produce items for export made of materials brought into the country, besides selling its coffee, sugar and other produce abroad. The agrarian reform by which large landowners were forced to turn over land to the peasants did not have the expected results. The illiteracy rate has stayed high and the poor peasants are not able to manage the farms. Students at universities have struck repeatedly, demanding equality for all, and that in turn has led to inferior standards for incoming youths into the system. Many promising and hard-working people have left the country and settled in the United States. At the same time, the birth rate has not declined, in spite of some attempts at Family Planning within the health care system. At the time of my visit, travel through the country-side outside Metropolitan San Salvador was still considered dangerous. In spite of that condition many Salvadorans could be seen traveling in buses into the country-side to earn money during the coffee and sugar harvesting time.

The Earthquake of October 10th 1986 leveled many commercial buildings in downtown San Salvador, particularly high-rises. The significance of damage was also unusual in that many buildings sank into the ground, which was the result of a quake which had severe vertical impact, followed by the more usual horizontal movement. Buildings split along vertical expansion joints and cracked where ever additional structures had been attached to main buildings. The report of a structural engineer states quite unequivocally, that the actual

construction often did not resemble the construction drawings' details. In addition, there appeared to be a complete lack of test borings; those would have shown many areas to be top-heavy with volcanic ash, which resembles sand, and would have indicated that deeper foundation pylons should have been built. In any event, the area requires sound earthquake design for its structures, especially if there are to be more than two stories of height.

The hospitals and health centers of the Ministry of Health located in San Salvador were the object of my investigation, and it is their background and history which my report focuses on. Before doing so, it must be pointed out, that there are five hospitals in the metropolitan part of San Salvador, which are usually treated as if they belonged together; that is, they appear to be under the jurisdiction of the Ministry of Health. This is not so. There are, strictly speaking, only two; Rosales Hospital, built between 1895 and 1904, is located on 13 acres of land and abutts the old Military Hospital, not a MOH entity; across from Rosales lies the Maternity Hospital, which is a part of the MOH territory, and was built in the mid 50's. The ISSS, Social Services Hospital, a few blocks North of Rosales, is managed with social security insurance payments, which are strictly separate from the Ministry of Health budgets. The Bloom Hospital, a Pediatric Facility, was donated to the Ministry of Health but is managed by a Foundation, which also prefers to make decisions on its own; it is located another eight blocks North of the ISSS Hospital, and was erected in the late 60's. Thus it can be said, that the 790 bed Rosales, the 350 bed Maternity and the 400 bed Bloom Hospitals represent a total of 1540 beds in the center of town and under the jurisdiction of the MOH. The population of Greater San Salvador is estimated at 1,200,000, and the total bed capacity is 4547, of which 543 are private beds, 687 are ISSS

and 377 are Military, as well as 68 ANTEL beds; at the outskirts of San Salvador, another 1322 beds under the auspices of MOH appear to be dedicated to Mental Health, Rehabilitation and Tuberculosis. The latter were never mentioned or discussed at meetings with the PAHO or MOH representatives. Emphasis is most often given to General Care Hospitals of the secondary level type. The population is drawn to Rosales Hospital most often, because - with the exception of Pediatric and Maternity cases - that hospital is perceived to have the best trained specialists and physicians in El Salvador. However, here too the doctors are not full-time, having their practices outside the campus. It is easy to see, that 264 people per bed in the San Salvador area indicates over-bedding for health care. Strong competitive aspects further aggravate the situation, and only the poor avail themselves of the services at Rosales.

Technical expertise is hard to find and operations as well as maintenance of the hospitals and health centers reflect this condition. There is little training for sensitive equipment repair and the standards of environmental safety and health are quite low. Repeatedly in the past experts have recommended that utility lines be identified and located on drawings, that as-built drawings be made and up-dated of each health care facility, that fire-hazards be noted and corrected, but none of these appear to have been done. Costs for rehabilitation or new construction must therefore be suspect, since they cannot be based on actual experience. A reduction in bed capacity and upgrading of operational staff seems the most basic approach to present problems, quite apart from the Earthquake reconstruction tasks.

VI. PLACES AND PERSONS VISITED, ACTIVITIES

- December 6 Departure for El Salvador;
- December 7 First Meeting with P.S. Gibson, AID/HR-HA;
- December 8 Visit to HID sub-contractor's offices, meet with Engineer Aldo Miranda for Architectural/Structural information and receipt of collected data.
- Visit to PAHO offices with P.S.Gibson.Aldo Miranda, to meet Ing. Victor Pou-Howley and to establish status of findings, regarding seismic investigations, and time of release of MOH/PAHO plans.
- Visit to AID/HR-HA offices to review Hector J. Diaz' Report for reconstruction and renovation of Hospital Rosales, requested by AID, and dated August 8, 1986.
- December 9 Introductory visit to Ministry of Health, for future contact possibilities.
- Intended presentation meeting at PAHO offices; attended by Gibson, Fiedler, and SKW for AID; Dr. Novaes, Ing. Pou-Howley and Architect Eduardo Robiero present map of Health Facilities for San Salvador and a preliminary CPM (Critical Path Method) chart for AID scrutiny, but postpone final presentation of Master Plan to 12/10/86.
- December 10 Meeting with MOH Co-ordinator de Molino and staff and site visits to Health Center San Bartolo and to Hospital San Raphael at Santa Teluca.
- Meeting with P.S. Gibson at AID offices.
- Meeting at PAHO offices, attended by Jack Fiedler and SKW for AID; Architect Robiero and Ing. Pou-Howley submit preliminary designs of Questionnaires for existing health facilities to be used in January 1987; discussion of cost factors for construction between Robiero and SKW; agreement for basis of future programming methods.
- Introductory meeting initiated by Ing. Pou-Howley to familiarize Dr. Raul Paredes López, PAHO Representative to El Salvador with AID team members Fiedler and Koch-Weser.
- December 11 Write report on meeting of previous day's PAHO visit, draft San Salvador Health Facilities plan and prepare Health Unit listings by zone for AID (Gibson and Armstrong).
- Meeting with Kevin Armstrong; attended and requested by Fiedler and Koch-Weser; purpose: to request better guidance and information availability for TA efforts.
- Meeting with P.S. Gibson; review of status.
- Late night meeting with Fiedler and Armstrong, informal and unplanned.

VI. continued

- December 12 Meeting at PAHO, initiated by Fiedler and SKW, with submittal of health facilities location map, prepared by SKW, and to ascertain that the number and types of health units are accurate. Ing. Pou-Howley indicates that the Master Plan from MOH/PAHO is in its final stages, will be presented to the Minister for review and that four copies will be distributed early during the coming week. In addition, Fiedler and Koch-Weser are informed that the PAHO team will end its first working phase by 5 pm of this day, to reconvene on January 6, 1987. Review by AID's TA team and officers will therefore not commence until later in the month.
- Visit to Health Unit Barrio by Fiedler and Koch-Weser; inspection of facility and introduction to Director.
- Last and lengthy meeting with P.S. Gibson and J.Fiedler; disagreements between PAHO planning methodology and Gibson's approach are explained. Question as to the practicality of writing report and need for additional efforts is stated.
- Koch-Weser changes plans for return to the USA, from December 16 to 15. Fiedler contemplating an earlier departure date.
- December 13 Xeroxing of material and preparing of draft report for REACH at offices of AID. Typing of data collected and preparing the mailing of two parcels of material for mailing to USA.
- December 14 Travel to damaged hospitals in center of city for external viewing; no arrangements were made by AID earlier on; otherwise free day.
- December 15 Travel from El Salvador via Guatemala and Miami to Boston, Massachusetts.

VII. RESULTS/CONCLUSIONS/RECOMMENDATIONS

Chapter IV, Purpose of Visit, explains briefly, that this consultant does not believe the results of the trip reflect the original intent, and further delineates what steps should have been undertaken earlier on by AID. Thus, I should like to concentrate on what activities I would have proposed to undertake, had an opportunity availed itself.

Site visits to three major hospitals in San Salvador and some of the 14 health units during the first two days would have given an insight into their condition, the lay-out and services offered. These visits would have presented an opportunity to list some very pertinent questions regarding reasons for certain unusual conditions, such as the existence of patronatas, the historical development of independent nursing units under the control of specialty physicians, and the strict separation between ISSS and MOH; to name just a few. On the third day it would then have been possible to listen to PAHO's outline of solutions and question whether their plan would assist in reducing or avoiding the relatively negative aspects of an existing system. By the fourth and fifth day of the visit, this consultant would have been able to propose additional characteristics with a lot more assurance for the development of PAHO's Master Plan. A memorandum written on December 11, 1986 and annexed to this report suggests a positive impression to PAHO's expressed proposal, but it lacks the reasoning on which such statements must be based. In addition, it mentions no value judgement regarding AID's plan for several quonset-type buildings as a solution to the emergency. Yet, this consultant recommends that quonset type shelters be only considered for storage and temporary sheltering of non-medical activities.

VII. continued

Data concerning budgetary decisions within the MOH, methods of assigning staff to centers, operational guidelines and maintenance schedules by MOH and many other considerations should have been answered before cost effective solutions for the future can be made. Reactions to urgent situations can not be judged well, if they are based solely on requests as perceived by a powerful group of providers, the physicians. For instance, the drug distribution project must be based on medical interpretation of the most prevalent diseases encountered and the particular drugs required for treatment. Plans for in-patient units in health centers must provide for flexible staff use and reflect economic considerations, i.e. time-motion studies. Adequate accounting methods for supplies and maintenance care must be kept; visits that were made to sites, and mentioned above in this report, failed to convince this consultant that adequate management techniques are in place.

It is difficult to propose what division within the Ministry of Health should be responsible for various necessary activities without knowing anything about its present make-up, and I defer to other well-informed people for such suggestions. Certainly the PAHO-team had many meetings with MOH during which such details may have been resolved or atleast discussed. In any event, justification for each category in budget outlays must be presented before assumptions can be made, that a new plan will work. No Master Plan can be made effective, unless all aspects of a health care system are reviewed and priorities are re-ordered. It is hoped that, if they have not yet taken place, these inquiries will be made early on in the new year of 1987, and a part of the CPM.

VIII. FOLLOW-UP ACTION REQUIRED

It is this consultant's opinion, that top management of AID and PAHO need to commence to join seriously in an effort to co-ordinate their efforts, if a joint venture is to continue to be possible. If staff in either group is not available for the foreseeable future, it might be more profitable to put responsibilities into the hands of one organization rather than two. Unless AID can offer its local staff and facilities for such an all-important project, there may be more harm in a half-hearted attempt than none at all. It appeared to this consultant that many other AID projects for El Salvador occupied most of the attention and time, and thus it was impossible for us consultants to have the support and assistance in arrangements for scheduled visits or site inspections. Regretfully, it must be pointed out, that in-depth research was not possible without daily assistance by AID-HU/HA in providing selected material from the past. After a week this consultant felt that she had oriented herself somewhat and that a repeat visit might have been more productive. However, by then the special PAHO-team offices had closed for the holidays, and protocol had required submittal of their written material to go to MOH. Only after review were copies of the Master Plan going to be distributed to AID. This caused some consternation, but it points out that the joint effort between two agencies had not been adequately prepared and protocol had not been established. Copies of telegrams and letters clearly indicate that AID was not brought into the effort until November 14, 1986, and thus all subsequent efforts were seriously handicapped from the beginning. The search for technical assistance consultants and the delay in visa requirements further compounded the problem.

To make recommendations for the future is difficult, if one has neither the means to effect same or the knowledge as to

VIII. continued

whom one might be able to turn to to explore remedies.

However, a review of PAHO's Master Plan might be a good way to start, in that recommendations and suggestions could be forth-coming to aid them in their efforts. This could also present an opportunity to establish protocol for a joint venture in future months, if there is to be concerted plan for action by both agencies.

IX. MATERIALS AND DATA REVIEWED

1. Identification of Requirements Memorandum; post-Earthquake. AID-ES, Oct. 31,1986; by Armstrong, Saarvedra, Kennedy of AID.
2. Needs of Hospital Bloom Memorandum. AID-ES, Oct. 31,1986; by Armstrong of AID.
3. Plan Regulador de Reconstruccion del Sistema de Salud del Area Metropolitana; with cover letter to P.S.Gibson by Dr. Raul Paredes López, PAHO-ES, dated November 14, 1986.
4. Informe de Viaje, San Salvador. Oct. 27-Nov.5,1986; by Dr. H. de Moraes Novaes, PAHO-ES Team Chief.
5. Informe de Viaje, San Salvador, Nov. 17-26,1986; by Dr. H. de Moraes Novaes, PAHO-ES Team Chief.
6. Pre-Design Report, Rosales Hospital, San Salvador, E.S. by Hector J. Diaz, Architect Consultant to AID, dated Aug.8,1986.
7. Plans and Inventories of 57 Hospitals and Health Units, by Rodriguez Rochac, Ingenieros Contratistas, dated June 1986, and comissioned by AID-ES.
8. Inspection of damaged hospitals, report and cover letter, dated December 1,1986, by Michael Baltay, Structural Engineer, and Consultant to PAHO Team.
9. Componente, Mantenimiento y conservacion; a report by Angel Viladegut H., Ing., Consultor OPS/QMS, dated Dec. 1986.
10. Ubicacion y Zonas de Influencia de las Unidades de Salud Existentes; MSPAS-ES. No date on the plan.
11. Demarcacion de Areas de Atencion del Sistema Metropolitana de Salud, Niveles Primario y Secundario; MSPAS-ES. No date on the plan.
12. Desarrollo de la Propuesta; Tres Etapas; MSPAS-ES. An undated schedule of step-by-step programming towards the completion of construction of three 200 bed Hospitals and five Health Units and repair of six existing Health Units. No date.
13. Consolidado de la Capacidad Fisica Instalada; Unidades de Salud de la Region Metropolitana. Nov. 27, 1986; MSPAS-ES.
14. Bio-Medical Equipment and Maintenance System of the Ministry of Health and Social Assistance of El Salvador; a Report by Oliva, Pereira and Boostrom; AID-ES , June 1986.
15. Executive Summary by Dr. John Fiedler, Health Economist, of Birch and Davis Associates, Inc. ; relating findings of a site visit in June 1986.
16. Establecimientos y Servicios de Salud, El Salvador 1985; Departamento de Estadisticas de Salud, MSPAS.

IX. continued

17. Health Services Organization in the Event of Disaster; PAHO publication of 1983.
18. Numero de Establecimientos por Regiones de Salud, segun Tipo de Servicio Prestado, 1979 y 1985; from "Aspectos Socio-Demograficos" by Alex Alens, June 1986.
19. MEMORIA- 85/86; Ministerio Salud Publica y Asistencia Social. An Annual Accounting of the Services rendered and the Agencies contributing to the total health care system.
20. Construction Costs - 1974; Author unknown; contains data obtained prior to 1974 in an effort to justify costs for, staffing of, and maintenance costs for health care buildings, which were to be funded by the International Development Bank (IDB); The construction projects did take place, but the projections vis a vis personnel and operating costs proved to be faulty.
21. Economic Indicators : El Salvador; Prepared by U.S. Embassy staff in San Salvador; issued June 1986.

ANNEX

- 26 -

MEMORANDUM

From: Sophie C. Koch-Weser,
REACH Consultant to AID-HR/HA

To: Patricia S. Gibson
Kevin Armstrong

Date: December 11, 1986

Reference: Resulting plan proposals to those presented by the PAHO group.

As you know, Dr. Novaes and his assistants have decided, after numerous attempts to persuade MOH to resist the reconstruction activities for Hospital Rosales and make efforts to combine resources with ISSS and Fundacion Bloom, that the planning path, reflected in their CPM and the Map of Metropolitan San Salvador, should concentrate on a Zonal break-up of the Metropolitan Area and the subsequent planning of three 200-bed hospitals, one for each zone, with attendant replacements, repairs or additions to the Unidad de Salud network. This plan, I feel, should be supported, since it will result in demagnetizing health care services from a rather damaged central area and, most importantly, allow for a much improved efficiency and more up-to-date health care facilities network. Furthermore, no existing activities would be interrupted, while such building progresses. By the time this first phase of construction has been accomplished, the need for as many as 1400 present bed capacity in the very heart of San Salvador shall have been proven too high. It is apparent that, quite apart from the earthquake damage considerations, the break-up of Pediatric, Maternity and Adult Medicine into autonomous units has not functioned well and been a drain on the budget, even if all of them could be rehabilitated.

As a result of the above, I have put down some of my own thoughts on the subject of why PAHO's general goal should be assisted and, if possible, be improved upon. To give a better overview of the location of each health unit, I have created a smaller map and identified the various circles of impact that the zones will have with present facilities numbered and identities graphically indexed. Unfortunately, neither the time and opportunity is available at this time to establish number of staff, number of areas of operation and other characteristics of each unit.

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However, the package of information given to us on 12/10/86 by PAHO includes a CPM schedule and proposed forms for gathering this type of information during the next few weeks; who will do this work and exactly when is not clear at this time, but it is vitally necessary before decisions can be made, regarding

- a. what health unit remains
- b. what health unit needs repairs
- c. where a new health unit should be located, so that the zone can service adequately a population of 200,000.
- d. where a health unit may not be needed.

Plans for a typical health unit and plans for a typical 200 bed hospital could, however, progress on a parallel time line. That is also indicated on PAHO's time table. I shall be studying the plans by the Roccar firm to convince myself of the need for Postes; at present I am still not convinced that they are efficient or needed within a metropolitan area, when a good and comprehensive health facilities network exists. Already we see, how the interruption of services at the Hospital Rosales' Consulta Externa has driven the local population to the Unidad de Salud de Concepcion (see attached clipping from to-day's La Prensa).

If I am to be effective or helpful in the future, I will need the following data or the name and place of such a source for:

- a. Patient encounters per health unit per day, week or year
- b. Staffing numbers by type for each health unit
- c. Staff availability per day at each unit presently.
- d. Typical staffing of an in-patient unit and its bed number size.

Figures for health units outside the three major health zones are not as important at this time, although they may be needed in future. The Central Zone, which I have indicated on my plan and which is not reflected on the PAHO map, serves the purpose of giving the ministerial and medical groups

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the feeling, that we have at this time no intention of impinging on their realm of influence, although it is hoped that the frequently mentioned 450-500 bed hospital of tertiary care, which eventually will be needed by the nation of El Salvador, can then serve as an umbrella support facility to the 600 secondary care level hospital beds and their communities.

Further suggestions for making the work of AID in this project more effective would be the putting together of a small library, consisting of previous study reports, plans and maps, which could strengthen AID members and consultants efforts to familiarize themselves with the activities of the past. I hope this remark is not offensive, because it contains my reaction only to the considerable amount of effort that I have had to make to orient myself and to try and make some valid suggestions. I look forward to submitting my detailed report with impressions and proposals after my return to the United States.

Attached: CPM by PAHO
Newspaper clipping
Map of health zones by SKW
Index of health units by zones by SKW

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Excita acudir a Unidad de Salud de Concepción

"Gracias a la descentralización médica del Hospital Rosales, hemos ampliado nuestro horario de consultas y hacemos una excitativa a la comunidad del barrio de Concepción y sectores aledaños, para que se acerque a nuestra unidad".

Así lo manifiesta la doctora Grady de Molina, directora de la Unidad de Salud del barrio de Concepción, agregando que después del terremoto y a raíz de la descentralización del personal médico del Hospital Rosales hacia las unidades de salud capitalinas, el personal médico se ha in-

crementado en estos centros asistenciales.

Este factor, dice, nos ha permitido aumentar la cobertura diaria al público y poder así atender a más niños, adultos, ancianos, control de embarazos, planificación, vacunación y consulta externa en general, además de nuestros servicios de laboratorio, odontología, curaciones, inyecciones y otros servicios afines.

En consecuencia, expresa la doctora de Molina, reiteramos el llamado al público en general para que asista a nuestra Unidad, ubicada en la 5a. Calle Oriente No. 717 de esta capital, con horarios de 6:30 a.m. a 5:00 p.m., de lunes a viernes.

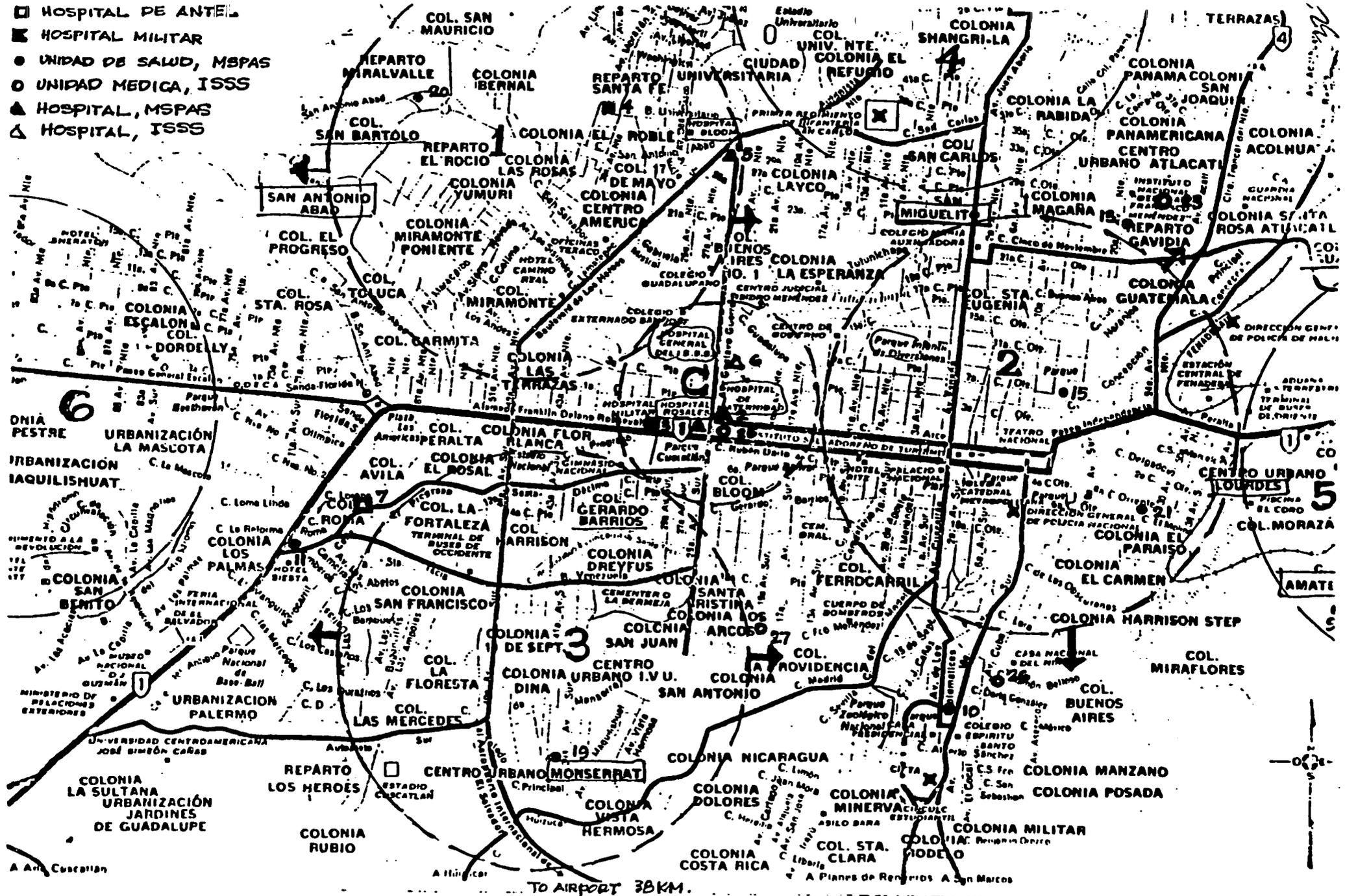
Entusiasmo por.

CONCEPCIÓN H. U. IS 17 BLOCKS
EAST OF HOSPITAL ROSALES #16
BLOCKS EAST OF HOSPITAL MATERNIDADES
& HOSPITAL I. S. S. S. -

LUGARES DE UBICACION DE LOS HOSPITALES
Y UNIDADES DE SALUD DE SAN SALVADOR

<u>ZONAS</u>	<u>No.</u>	<u>NOMBRE</u>
C	1	Hospital Rosales
C	2	Hospital de Maternidad
C	3	Hospital Militar
C	6	Hospital del ISSS
C	25	Unidad Médica del ISSS 1° de Mayo
1	4	Hospital Militar (nuevo)
1	5	Hospital Benjamín Bloom
1	20	Unidad de Salud de San Antonio Abad
2	10	Unidad de Salud de San Jacinto
2	13	Unidad de Salud de Lourdes
2	15	Unidad de Salud de Concepción
2	21	Unidad de Salud de San Miguelito
2	23	Unidad Médica del ISSS Atlacatl
2	26	Unidad Medica del ISSS de San Jacinto
3	7	Hospital de ANTEL
3	11	Unidad de Salud de Barrios
3	19	Unidad de Salud de Monserrat
3	27	Unidad Medica del ISSS de Santa Anita
4	12	Unidad de Salud de Zacamil
4	18	Unidad de Salud de Mejicanos
4	28	Unidad Medica del ISSS de Zacamil
5	8	Hospital psiquiátrico
5	9	Unidad de Salud de Amatepec
5	14	Unidad de Salud de Santa Lucía
5	16	Unidad de Salud de Cuscatancingo
5	17	Unidad de Salud de Ciudad Delgado
5	22	Unidad de Salud de Soyapango
5	24	Unidad Medica del ISSS Ilopango

- HOSPITAL PE ANTEL
- HOSPITAL MILITAR
- UNIDAD DE SALUD, MSPAS
- UNIDAD MEDICA, ISSS
- ▲ HOSPITAL, MSPAS
- △ HOSPITAL, ISSS



TO AIRPORT 38KM.

**CONTRIBUTIONS TO THE EFFORT TO REHABILITATE THE EARTHQUAKE-
DAMAGED PUBLIC HEALTH CARE SYSTEM OF EL SALVADOR AND TO THE
PLANNING OF A COMPREHENSIVE HEALTH CARE SYSTEM FOR THE
METROPOLITAN REGION OF SAN SALVADOR**

December 8 - 21, 1986

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I. LIST OF CONTACTS: PERSONS AND PLACES VISITED

A. Agency for International Development (AID)

Human Resources and Humanitarian Assistance (HR/HA)

Office of Projects (PRJ)

Vitalizacion de Sistemas de Salud, VISISA (The current USAID health project in El Salvador)

Economic and Commercial, Department of State (DOS, Econ/Comm)

Calle Loma Linda

Colonia San Benito

San Salvador, El Salvador

Tel. 23-1949; 23-5484; 23-5591

1. P. Sue Gibson, Deputy Chief, HR/HA
2. Kevin Armstrong, Population Officer, HR/HA
3. Aldo Miranda, Engineer with VISISA sub-contractor Health Information Design (HID)
4. Deborah Kennedy, PRJ
5. Mary Saavedra, VISISA
6. Robert E. Long, X-ray consultant to AID
7. Dr. Raul Guillermo Toledo, Population Advisor to AID
8. Eduardo Pena, Econ/Comm Section of DOS
9. Luis Arriaga, Economist, AID
10. Jorge Mazini, HID team member.
11. Ing. Luis Oliva, Biomedical Equipment System Advisor, HID.

B. Ministry of Public Health and Social Welfare of El Salvador (MSPAS or MOH)

Secretaria del Estado

Calle Arce, #827

San Salvador

Tel. 71-0008

1. Dr. Jose Antonio Pereira Galvan, Director General
2. Dr. Hugo Moran Quijada, Director of Health Planning
3. Lic. Regina Guzman de Molina, Coordinator of the PAHO-MSPAS PMS Nucleo Tecnico Asesor, Chief of the Institutional Development Section of the MSPAS Department of Health Planning.
4. Sra. Dina Mata de Leiva, Chief of the Financial Accounting Division
5. Carmen Elena Cortez, Architect, Engineering Division
6. Dr. Juan Antonio Perez, Chief, Statistics Unit

Metropolitan Regional Office

1. Dr. Duran, Director
2. Dr. Casteneda, Deputy Director
3. Lic. Juan Jose Bonilla, Chief, Statistics Unit

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Pan American Health Organization (PAHO or OPS)

Calle 2, #279
Colonia San Benito
San Salvador

1. Dr. Raul Paredes Lopez, Director
- 2 Dr. Humberto de Moraes Novaes, Regional
Advisor/Washington
3. Ing. Victor Pou-Howley
4. Lic. Eduardo Leite-Ribeiro, Architect

II. EXECUTIVE SUMMARY

1. This work was done at the request of the Agency for International Development/El Salvador's Human Resources/Humanitarian Assistance Section. The authorizing entity was the Agency for International Development's Bureau for Latin America and the Caribbean/Development Resources/Health and Nutrition as well as Science and Technology/Health.

The overall goal of the consultancy (as set forth in the November 12, 1986 AID/Department of State cable) was to work as a member of a PAHO coordinated team working with the Salvadoran Ministry of Health team to develop a global plan for reconstruction and development of the seriously damaged health service facilities network in the metropolitan San Salvador area.

The general approach of the work consisted of two meetings with PAHO team members, brief meetings with members of the MOH team, data collection-related meetings and discussions with MOH Central Office and Regional Office personnel, and data analysis activities.

The report presents a relatively detailed background section which reviews the MOH's activities over the last decade, and the constellation of factors (both internal and external to the MOH) which have affected its performance during this era. This information is essential to understanding the trajectory of the MOH, which in turn is a prerequisite to developing a technically sound, yet pragmatic and implementable plan by which to begin the process of rationalizing the health facilities network of the greater San Salvador area. The report also contains additions to PAHO's as yet nascent conceptualization of what that network should consist of, and raises a host of issues relating to (1) the research and development of the specific service configurations to be provided in the proposed facilities, (2) the construction and operating costs of the proposed network, (3) efficiency enhancement and revenue generation potentials, and more generally their management of day-to-day affairs (particularly as they relate to the patient-intake process and delivery of service), and finally (4) provides part of the baseline of data on the utilization, service characteristics, and costs of the present system, which will provide a benchmark for the proposed network (once a more definitive scheme is developed).

2. Key Findings

The bulk of this report does not consist of any new, major findings. Once it became evident that the original scope of

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work could not be fulfilled during this two week consultancy (for reasons detailed in the report), it was determined that the most effective use of this consultant's time would be to further elaborate on the as yet rudimentary PAHO design for the proposed Metropolitan Health Plan (Plan Metropolitana de Salud, PMS). This consisted of (a) pointing out that there were as yet many unresolved, inadequately addressed, and unaddressed key issues (which PAHO readily informed us of at our first meeting with them), and (b) to begin work on them.

The major empirical findings are:

(1) Although during the five year period studied (1981-1985) there are a number of factors (detailed in the text) which would lead one to expect that the level of utilization of the health units in the Metropolitan Health Region were increasing, the level of utilization (both the total and the average per unit) in fact fell. Establishing why this trend developed is important input into the design of an effectively functioning PMS.

(2) Although there are exceptions, the utilization levels of most of the individual health units (i.e., the total number of consultations they provided) in the Metropolitan Health Region follow an inverted-V pattern; generally having peaked in 1983. While the utilization of the health units--taken as a group, as well as the per unit average--has fallen, the number of persons served by the facilities has not fallen by as much. The result has been a steady increase in the number of consultations per person among those who seek care from these health units. The reasons why fewer individuals seek care at units, but those who continue to turn to them do so more frequently is missing, but vital information to effectively planning the PMS.

(3) The average number of prescriptions (written and filled) per person and the number of prescriptions per consultation at all twenty-three units fell consistently from 1981 through 1985. Although available data will not support the development of a causal relationship it may be that there is some link between falling utilization and falling drug availability. The evidence suggests, however, that this relationship is not a simple one: one would anticipate for instance that falling availability of drugs (and hence falling prescriptions per consultation and/or per person served) would prompt a reduction in use of the health units with some type of lag (i.e., delayed reaction). That utilization rates continued to increase for three years (1981-1983), during which unit prescriptions were falling suggests

that other causal factors compounded this relationship.

(4) At least five of the twenty-three health units in the Metropolitan Health Region provide fewer than the MOH-established minimum acceptable number of consultations per physician-hour throughout the five year period analyzed. Although the geographical bounds of PAHO's PMS and the Metropolitan Health Region are not contiguous, and at least some of these facilities lie outside the PMS catchment area (as currently conceptualized), this finding urges caution in (a) constructing arbitrary service areas and (b) in simply accepting the existing network as a starting point upon which to develop the PMS.

(5) One major decision point for the design of the proposed metropolitan network is whether or not the to-be-constructed community hospitals should have outpatient departments. In an effort to provide input into this decision it would be useful to determine the relative costs of a physician-provided consultation at a health unit versus one provided in a hospital outpatient department. There is no way to ferret out of MOH budgets the cost of a physician-provided, outpatient consultation. From a pooled cross sectional, time series multiple regression analysis of El Salvador's fourteen hospitals (not just those located in metropolitan San Salvador) from 1981-1985 it was estimated that each such service costs the MOH slightly more than 41 colones (U.S. \$8.20).

3. Recommendations

1. It is recommended that AID seek to participate in the design and implementation of the PMS. The project, while still in the early stages of design, nevertheless holds great promise. The earthquake has provided an opportunity to begin the process of rationalizing the public health care system in the heart of the Salvadoran system. This project will determine the chief characteristics of the public health care system of El Salvador for at minimum the next three to five decades.

2. AID should make every effort to dovetail the PMS project with that of AID's new health project, the Health Systems Support Project (HSSP), and other AID-sponsored efforts in the health sector. At present, the type of information required to rationalize the public health care delivery system of El Salvador simply do not exist. Much of this information will

be assembled and/or obtained as part of the HSSP. To the maximum extent possible the timetables of these two important projects should be coordinated.

3. A technical assistance team of medical care providers must be incorporated into the PMS to (a) examine the appropriateness of current treatment regimes, (b) help develop epidemiologically-based (i.e., needs-based), service configurations, and (c) working with a health facilities architect and a health economist, help to develop the facility and equipment specifications of their proposed service configurations.

4. In conjunction with Recommendations 2 and 3, the various unresolved and unaddressed issues documented throughout this paper need to be raised, investigated, assessed, and incorporated into the PMS.

5. Similarly, the original scopes of work for the health care facilities architect and the health economist will need to be fulfilled. Specifically, (a) additional work remains to be done in developing cost estimates of the existing MOH metropolitan health facilities; (b) an analysis of capital and operating costs of the various configurations of facilities and services which are (yet to be) proposed will need to be developed; and (c) methods for obtaining additional resources need to be examined--both via enhanced efficiency and increased revenue generation, will need to be examined.

III. PURPOSE OF VISIT

SCOPE OF WORK

As stated in Department of State telegram sent from the United States Embassy, AID/El Salvador to the Health, Population and Nutrition Section of AID/Washington dated November 16, 1986:

3. Proposed scope of work is as follows:

- A) Review operating and fixed costs of the current configuration of MOH metro health facilities.
- B) Prepare an analysis of capital and operating costs of various possible configurations of facilities which would respond to the technical requirements for health services in the metro region.
- C) Costs of specific services under different operational modes.
- D) Explore possible financial resources including those of MOH and other donors to meet capital and recurring costs.

This work together with that of AID Technical Assistance team member Architect and Health Facilities Planner Sophie Koch-Weser, was intended to constitute the bulk of AID/ES's substantive/technical contribution to a working team (dubbed the Nucleo Tecnico Asesor) staffed primarily by PAHO and El Salvador Ministry of Health officials.

Two and one-half weeks after the earthquake of October 27, 1986, PAHO/Washington sent Dr. Humberto Novaes to El Salvador to assess the damage to the public health care infrastructure of San Salvador, and to begin developing a plan for rehabilitation. Novaes' report on his activities during that 10-day trip is presented in Annex 3. During the trip Novaes met with MOH officials and learned of their assessment of damage and their intentions (which are presented as appendices to his own report in Annex 3 of this document) to build take this opportunity to introduce some basic structural changes in the public infrastructure, doing so within parameters of a newly, to-be-developed, long range, metropolitan health plan. These changes were consistent with the PAHO-initiated and recently MOH-invigorated plan to decentralize public health care services and planning, and hence was viewed for the most part very positively by Novaes.

There was, however, one salient point of disagreement. The MOH plan called for construction of four new 100 bed hospitals (or health centers in the nomenclature of the Salvadoran MOH). Novaes, on the other hand, arguing that the exploitation of economies of scale suggested something of a tradeoff between the improved access provided by four small hospitals and the greater

efficiency (lower unit service costs) of larger hospitals, proposed that it would be more desirable to build instead three 250 to 300 bed hospitals. A compromise of three 200 bed hospitals was eventually developed. The development of that compromise, however (subsequently labeled el Programa Metropolitana de Salud, PMS), and the formation of a working team (the Nucleo Tecnico Asesor) comprised of MOH and PAHO personnel (see Annex 4) was apparently such a time-consuming endeavor that the project was nowhere near the required developmental phase of a significantly detailed proposal to allow the AID TA team to undertake their entire original Scopes of Work. PAHO in particular was readily and openly willing to admit that they and the MOH had just begun the process of conceptualization.

Specifically, the still nascent nature of the PAHO/MOH conceptualization of the proposed system precluded undertaking Items B) and C). Moreover, item D) is largely a moot issue at this time as well. The question of costing out and arranging for the financing of recurrent costs of a largely as yet unconceptualized system makes little sense. With regard to capital--and specifically construction--costs, the Interamerican Development Bank (IDB or BID) has expressed a willingness to provide the necessary funds. It was, in fact, the IDB which suggested to the PAHO/MOH team that seek to include AID/ES in the PMS in at least an evaluative capacity. The IDB further indicated that in the event that AID/ES technical assistance experts favorably evaluated the proposal that it (the IDB) would be favorably disposed to funding it.

That leaves only Section A) of the original scope of work. This report is primarily focused on this Section, although some tangential issues were also analyzed at the request of the Deputy Director of HR/HA, El Salvador, P. Sue Gibson. These additional activities were developed in a very dynamic, on-going discussions/negotiations process throughout the course of the consultancy. (Section VI. further discusses the outcome of these discussions).

IV. BACKGROUND

A. THE ORGANIZATIONAL STRUCTURE OF THE MINISTRY OF HEALTH

1) THE HOSPITALS VERSUS THE REGIONAL HEALTH SERVICES

The Ministry of Health consists of two, unintegrated organizational entities. The State Secretariat (or Central Office) and the Regional Health Services (which is made up of the health centers, units and posts) together comprise what is referred to as the Centralized Agencies. The other "half" of the Ministry consists of the so-called Autonomous (or Decentralized) Agencies, overwhelmingly dominated by the 14 hospitals.

The Autonomous Agencies' label is an accurate one: these organizations independently plan their own activities, independently submit and execute their own budgets, and independently compile and submit their own program statistics. They are creatures of the MOH only in name. Although two documents which are prepared by the State Secretariat include information about the hospitals, the numbers are simply compiled and reported by the MOH's Central Office; no analysis is performed.

The first such document is the hospitals' annual budgetary requests, the "Anteproyectos Presupuestarios de los Hospitales". The "Anteproyectos" contain data for three different years: they contain budget requests for the coming year, as well as the (final) budget allocations of the current year, and the actual expenditures of the previous year. They are annually submitted to the Ministry of Health's Financial Accounting Division. These requests are merely arithmetically summed with those of the "other half" of the MOH in the development of the Ministry's total annual budget request which is submitted to the Ministry of Hacienda (Treasury).

The second Autonomous Agency document prepared by the State Secretariat is the "Resumen de Actividades Hospitalarias", which is compiled and reported by the Statistics Unit of the MOH on a quarterly and annual basis. The Resumen contains a relatively detailed accounting of services provided by each facility.

Even the budgetary program categories of the hospitals are different from those of the rest of the MOH. In documents which itemize the MOH budget, the hospitals' budgets are never disaggregated (with the single exception of the annually published total government budget--the "Ley de Presupuesto") Instead, their entire budget--on an institution specific basis--is reported under the budgetary rubric "current transfers". It is not possible to obtain current information on the individual hospitals' budgetary expenditures at the MOH Central Office. The most recent that may be had are the two

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year old data presented (as already noted) in the "Anteproyectos". The only place more recent data may be obtained is at each of the separate (14) institutions. The unavailability of such basic information about the hospitals is a manifestation of their independence.

2) THE MOH'S APPROACH TO "PLANNING": HISTORICAL BUDGET-BASED RESOURCE ALLOCATION AND ITS IMPLICATIONS FOR THE PMS

The Ministry of Health's approach to planning and budgeting has been to follow what is referred to as historical budget-based resource allocation. In this process, the previous year's budget serves as the basic resource allocation, decision-making tool. Changes in the level of the Ministry of Health's total budgeted monies--both those requested from and those received from the Ministry of Hacienda--are generally allocated across the different MOH programs on the basis of the relative shares they received the previous year.

The outcome of this approach is clearly evident in any longitudinal analysis of the budget. At the most aggregative level, it is evident in the almost constant budgetary share of the hospitals. In the last seven years, the proportion of the MOH budget which has been allocated to the hospitals has varied by less than one and one-half percent (see Exhibit 1). Restricting the analysis to only those monies used to directly provide health care services--i.e., the share of the Regional Health Services (the health centers, units and posts) and the hospitals, reveals that the share of the hospitals has been even more constant; varying by only 0.6% between 1981 and 1985 (see Exhibit 2). These data also reveal another important factor: the paramount position of the hospitals in the public health care delivery system of El Salvador.

What does historical budget-based resource allocation mean for purposes of this study? The Programa Metropolitana de Salud (PMS) proposes to fundamentally alter the structure and functioning of the public health care delivery system of El Salvador. In contrast, historical budget-based resource allocation is an approach which is status quo oriented, and largely inert. This suggests that the proposed program may face considerable opposition. To gain insight into why this may be so, it is worthwhile to examine the rationale and motivation for adherence to historical budget-based resource allocation criteria and its associated incentive structure.

In a system driven by such a resource allocation mechanism, new initiatives, being perceived by existing programs and personnel primarily as threats to their own programs and positions, are not encouraged. One manifestation of this in El Salvador is that the MOH's finance/budget department is nothing more than an accounting department. Planning per se to the extent it is undertaken must be (and is) the charge of another section of the Ministry. But planners without budgets

EXHIBIT 1

THE PROPORTION OF THE MOH GENERAL
BUDGET-FUNDED EXPENDITURES MADE BY THE 14 HOSPITALS
(In current colones)

YEAR	TOTAL MOH OPERATIONS EXPENDITURES	TOTAL HOSPITAL EXPENDITURES
1980	147,491,090	82,962,301 (56.2%)
1981	152,184,161	83,431,628 (54.8%)
1982	149,823,095	83,042,297 (55.4%)
1983	143,515,369	80,324,454 (56.0%)
1984	157,288,512	87,933,232 (55.9%)
1985	164,445,381	92,415,713 (56.2%)
1986 (INITIAL ALLOCATION)		95,400,995 (55.8%)

Source: Informe Complementario Constitucional, Ejercicio Fiscal, Ministry of Hacienda, various years.

EXHIBIT 2

ACTUAL GENERAL BUDGET-FUNDED EXPENDITURES:
 RELATIVE SHARES OF THE REGIONAL HEALTH SERVICES
 AND THE 14 HOSPITALS*

YEAR	THE REGIONAL HEALTH SERVICES (CENTERS, UNITS, AND POSTS)	THE 14 HOSPITALS
1981	42,082,981 (37.8%)	69,199,832 (62.2%)
1982	41,829,243 (38.4%)	67,229,136 (61.6%)
1983	41,063,162 (37.8%)	67,435,368 (62.2%)
1984	43,082,981 (38.4%)	69,200,031 (61.6%)
1985	49,743,885 (38.4%)	79,879,100 (61.6%)

* Regional Health Services Expenditures are the "total utilizado" reported in Budget Program Code 1.06, "Servicios Operativos de Salud", Budget Subprogram Code 019, "Servicios Regionales de Salud". The hospitals' totals are the sum of Budget Code 201's 14 individual hospital "total utilizado" entries as reported in the annually published table "Estado de Gastos por Clases Generales del Presupuesto General de (ano), Resumen por Categoria de Programas, Unidades Primarias de Organizacion y Detalle de Programas", of the Ministry of Hacienda's annual publication, Informe Complementario Constitucional, Ejercicio Fiscal.

are not likely to have a particularly good track record in terms of implementation. They become frustrated and lash out at what they perceive to be the cause of their frustrations--the budgetary section and its immediate supervisors. The result is the sharp and openly antagonistic split between the budget section of the Ministry--and, at a higher level, the entire administrative department--and the programming and planning sections. Remedying this dysfunctional state of affairs will require changing the institutional structure or, at the very least, effectively altering the distribution of power within the Ministry of Health. It is possible that the decentralization process currently underway will accomplish this. Decentralization, at least as envisioned, will result in the coordination of planning and budgeting activities, which is essential if either is to be an effective instrument for allocating resources. Hence, the decentralization initiative must be viewed as extremely opportune, and its proponents within the Ministry of Health as indispensable allies to PMS advocates. The key individual within the MOH in this regard is Planning Section Chief Hugo Moran Quijada. (See his memo on decentralization of July 1986 in Appendix 5.)

3) THE INTERACTION OF HISTORICAL BUDGET-BASED RESOURCE ALLOCATION AND THE ROLE OF DONOR AGENCIES: IMPLICATIONS FOR THE PMS

At present, the changes which occur in the structure of relative allocations across programs and consequently across even functional categories (e.g., personnel costs, materials, etc.) are largely responses and/or accommodations to initiatives introduced by international donor agencies. Given the level of donor sponsored activities in El Salvador, such an approach constitutes the wholesale abdication of control of the budget, and concomitantly control of the direction and structural nature of the public health care delivery system. This is the major factor accounting for the growth in the share of the MOH Centralized Agencies' budget allocated to personnel and the concurrent reduction in the share allocated to materials and supplies. This abdication, the role of donor agencies and the changing composition of the Centralized Agencies' budget are clearly evident in the Interamerican Development Bank (IDB)-sponsored public infrastructure project.

Between 1975 and 1984, the number of public health facilities in El Salvador increased from 209 to 341; an increase of nearly two-thirds (63 percent--see Exhibit 3). Assuming that the average health center has five physicians, five nurses, one dentist, and one dentist, and 12 auxiliaries; that the average health unit is staffed by two or three (2.5) physicians, two nurses, one dentist and five auxiliaries, and that the average post has a single auxiliary; and that the average ratio of medical care to non-medical care personnel is three to one (a very conservative estimate, as it is likely to be higher), the increases in the numbers of these facilities

EXHIBIT 3
EVOLUTION OF THE MOH's INTRASTRUCTURE*

	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>
Hospitals	14	14	14	14	14	14	14	14	14	14	14
Centers	8	8	8	8	9	11	12	12	12	12	12
Units	72	94	85	103	108	107	97	98	98	100	100
Posts	115	124	135	143	159	161	198	202	208	215	218
Total:	209	240	242	268	290	293	321	326	332	341	344

* Units: Includes: "Unidades de Salud", "Unidades Móviles Comunitarias"
 Posts: Includes: "Puestos de Salud", "Puestos de Vacunación", "Puestos Comunitarios" and
 "Dispensarios de Salud".

Source: Salud Pública en Cifras and Memorias, various years.

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(exclusive of the several major hospital renovations and construction projects with their attendant increases in personnel requirements), has added more than 2,000 individuals to the Regional Health Services personnel roll; nearly two-thirds of the total increase over this decade.

Even in the face falling real budgetary allocations, the IDB-sponsored construction project continued. The rising numbers of personnel the MOH has had to hire and pay to staff these new facilities has meant that a decreasing proportion of the shrinking MOH budget has been available for anything and everything other than personnel. From Exhibit 4 it may be seen that since 1977 the share of personnel costs has grown from 56 percent of the Centralized Agencies' operating budget to 92 percent in 1985. Concurrently, expenditures on materials, supplies, machinery, and equipment have fallen from 44 percent to 8 percent of the Centralized Agencies' total operating budget over the same period.

EXHIBIT 4

**DISTRIBUTION OF THE MAJOR OPERATIONS
EXPENDITURES OF MOH's NON-HOSPITAL FUNCTIONS
(IN THOUSANDS OF COLONES)**

<u>YEAR</u>	<u>PERSONNEL</u>	<u>MATERIALS, SUPPLIES MACHINERY & EQUIPMENT</u>	<u>THESE OPERATIONS EXPENDITURES AS A % OF TOTAL OPERATIONS EXPENDITURES</u>
1977	24.836.8 (56%)	19.577 (44%)	98.6 %
1978	30.216.8 (70%)	12.946.7 (30%)	98.2 %
1979	36.444.7 (78%)	10.079 (22%)	98.2 %
1980	46.184.7 (79%)	12.537 (21%)	98.3 %
1981	47.422.5 (77%)	14.558 (23%)	98.8 %
1982	47.260.6 (85%)	8.175.2 (15%)	98.3 %
1983	49.164.4 (87%)	7.173.6 (13%)	98.6 %
1984	55.879.7 (93%)	3.970.7 (7%)	98.6 %
1985	59.772.1 (92%)	5.350.3 (8%)	97.5 %
1986	53.453.3 (77%)	19.010.4 (23%)	98.8 %

B. THE MINISTRY OF HEALTH, 1975-1986

1) AN OVERVIEW

Since it peaked in 1977, the Ministry of Health's real per capita expenditure level has dropped by 28 percent (MCPI-based adjustment²). With the exception of two temporary lulls (1980 and 1984) the erosion of the MOH's command over resources has been both monotonic and fairly constant. The impact of this trend has clearly left its mark on the public health care delivery system of El Salvador. The twenty year secular trend of the generally improving health status of the Salvadoran people was broken in 1980; most prominently by war, but also because of a less effectively functioning public health care system--the result, in turn, of an increasingly financially constrained Ministry of Health.

Government reallocations of appropriated monies to fund the costly war coupled with general austerity measures forced on it by a faltering economy were then (in 1979) and remain today primary causes of the falling levels of real monies available to the MOH. Ultimately, these same factors--the war and the economy--can, at least in part, be held accountable for the growing scarcity of supplies in general (and most notably in medicines and drugs) in MOH facilities, which has probably reduced both the effectiveness and the utilization of those facilities from what their levels would otherwise be, in a cumulative and spiraling fashion.

But the war and the economy were not and are not the only culprits. These trends did not begin in 1979. They were evident even a decade ago; well before the war and the economic crisis developed. The war and the faltering economy only served to expedite and exacerbate trends and tendencies that already existed. The more fundamental source of the problems--ones that predate both the war and the devastated economy--have been of an institutional nature. More specifically, they have been the historical mode of organization, and the resource allocation and decision-making processes within the Ministry of Health.

Comprised, as it were, of two separate systems with physically, administratively and procedurally independent budgetary processes, the Ministry of Health was not in a

1

This section draws extensively from the author's July 1986 Project Paper report, "An Economic Analysis of Segments of the Public Health Sector of El Salvador", and especially its Executive Summary.

2

The MCPI is a Ministry of Health-specific Medical Care "Price" Index. For a discussion of the rationale for and the construction of the index see the author's July 1986 work cited in the previous footnote.

position to (i.e., was not institutionally configured in a manner that was conducive to) its being able to effectively take control over its own destiny, yet alone to rationalize the allocation of its falling absolute level of resources. Saddled with two different systems with very different needs, and suffering continual and significant reductions in its level of real resource availability, the Ministry simultaneously was being confronted with the ever-increasing recurrent costs generated by the coming online of a (still) rapidly expanding, donor-funded, health infrastructure.

Given this rapidly and (at least in the first years) unpredictably changing situation, the Ministry's long established practice of historical based budgeting was a severe limitation. More facilities meant that more personnel were needed. And, as both the war and the economic crisis persisted, the implications of these fundamental institutional shortcomings manifested themselves in the structural-lock of budget extrapolations: in the growing percentage of recurrent costs being spent on personnel at the expense of the growing shortage of supplies, materials and drugs in the regional health services' facilities.

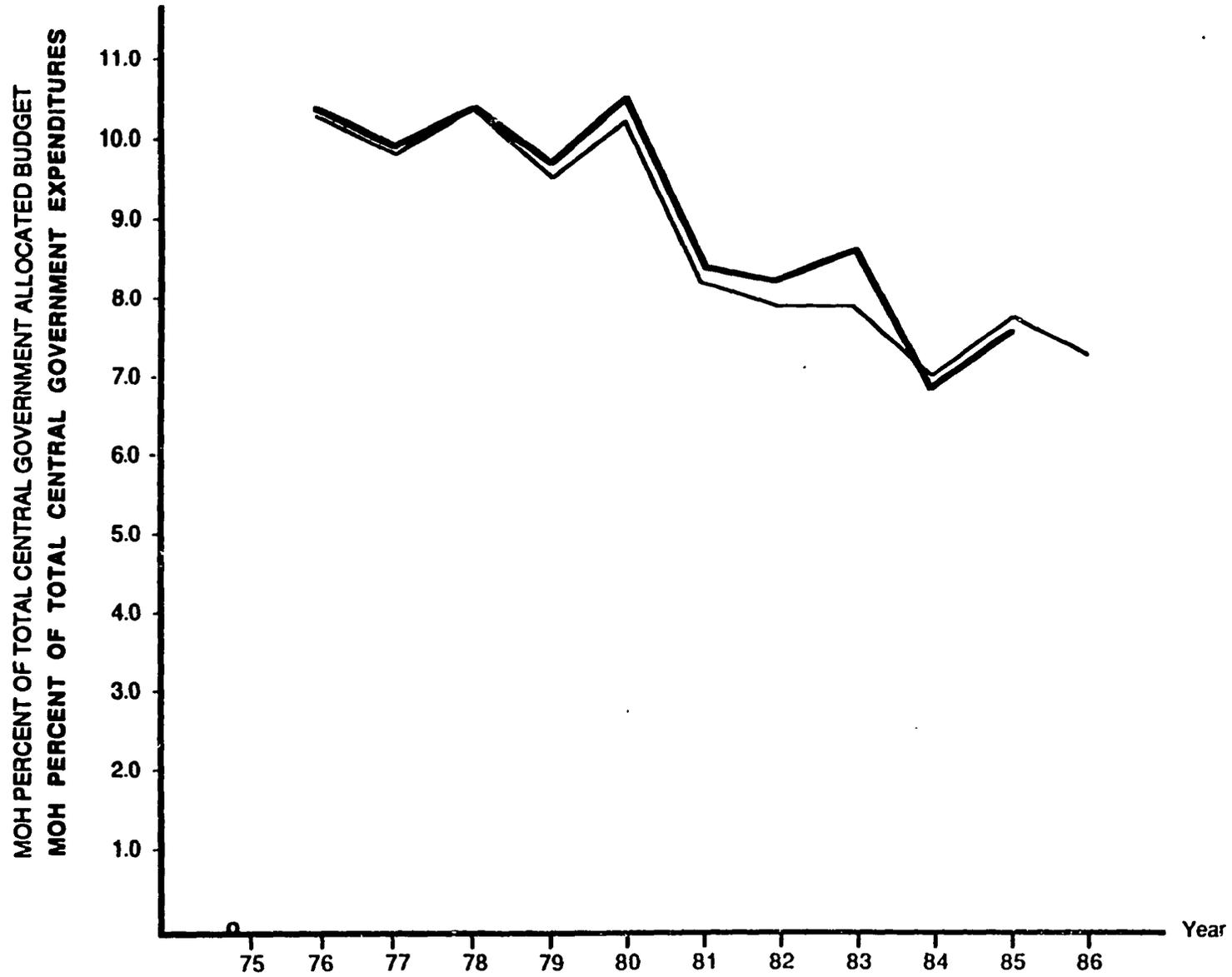
2) THE MOH BUDGET, 1975-1986

In the years preceeding the civil war, El Salvador's Ministry of Public Health and Social Assistance (MOH) generally enjoyed a climbing absolute level of budgetary support from the Central Government. Between 1975 and 1979, the Ministry's budget nearly doubled in size, growing 79 percent from 82,196,160 colones in 1975 to 147,155,000 colones in 1979. Since 1979, however, annual changes in the current colone level of the Ministry's funding have been erratic; increasing by more than one-quarter in 1980 and by 20 percent in 1984, but holding about constant in 1981, and actually falling in the remaining years--by 1 percent in 1981, by 4 percent in 1982, by 2 percent in 1983, by 8 percent in 1985 and by 5 percent in 1986.

Assessed in terms of its share of the total Central Government budget allocation and controlling for the impact of the growing rate of inflation, however, the pattern of recent developments becomes far less ambiguous and far less optimistic. In 1980, the Ministry of Health was allocated 10.6 percent of the total Central Government budget. By 1986 this proportion had fallen to 7.1 percent. Deflated by a special medical care "price" index developed for the MOH, the MCPI, the Ministry's level of real expenditures fell by 37 percent over the course of this six year period.

EXHIBIT 5

EVOLUTION OF THE MOH SHARE OF TOTAL CENTRAL
GOVERNMENT BUDGET ALLOCATIONS AND EXPENDITURES



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3) THE MINISTRY OF HEALTH'S PERFORMANCE, 1975-1986

a) CHANGING HEALTH FACILITY "PRODUCTIVITY"

Designed and underwritten by two long term, IDB-sponsored infrastructure development projects, the number of MOH facilities has grown significantly in the last ten years. The number of total MOH non-hospital medical care facilities increased from 209 in 1975, to 293 in 1980, and reached 344 in 1985. Consistent with the Ministry's programmatic effort to enhance access to and utilization of MOH medical care facilities, most of this growth occurred in the less resource-intensive, and more geographically dispersed (i.e., more accessible), health units and health posts.

Since 1977, despite the growing numbers of posts and units--both in absolute numbers and relative to other types of facilities--they have accounted for a falling proportion of total MOH-provided medical visits. Together in 1977-1979, they accounted for an annual average of 54.6 percent of all visits to an MOH facility. Between 1980 and 1982, this proportion fell to 51.5 percent; and most recently, between 1983 and 1985, this downward trend continued, falling to 47.8 percent.

There is no definitive evidence about what may have motivated these changes in consumer demand/utilization behavior. There are, however, a number of anecdotal pieces of information, and plausible deductive inferences (based on budgetary analyses) which are consistent with this 8 year trend. It appears that the MOH's relatively constant absolute levels of (nominal) outlays for materials and supplies, in the face of rising prices of materials and supplies, growing numbers of facilities, medical personnel (for the most part, required to staff the expanding infrastructure) and medical care visits, has so significantly reduced the materials and supplies-intensity of the average medical care visit, that the quality of care provided has fallen. Many of the people, it is generally believed, who frequent these "lower" levels of care, do so primarily to obtain medicines. The single most important manifestation of the growing financial constraint of the MOH for most Salvadorans is the significantly reduced availability of medicines in MOH facilities in general, and particularly in the health units and posts. Having learned first hand, or by word-of-mouth that there are few materials and supplies--and especially drugs--in these facilities, many people (it is hypothesized) are by-passing the lower levels of care, going directly to the centers, or even more commonly, the hospitals. Others, it is speculated, may be opting out of the public system altogether; turning to private providers, or--what seems more likely because of falling income levels--turning to pharmacies, pharmacists and self-medication.3

These longer terms trends of falling utilization of the posts and (to a lesser extent) the units, have been both expedited and exacerbated by the war and the economy. The war has disrupted life throughout the country, but particularly in relatively remote areas--the sites of most of the units and posts. It has made travel more dangerous for both consumers/would-be patients and for providers trying to get to these facilities. It has disrupted schedules and supply lines. It has generated more "business" in the form of war-related casualties, which has meant less time and materials have been available for "regular" clients. All of these factors--both their actual occurrence and the mere perception of their having likely occurred-- would discourage prospective MOH patients from seeking care as often as they might otherwise have done.

b) CHANGING PATTERNS OF PERSONNEL EXPENDITURES: POSITIONS, SALARIES AND "PRODUCTIVITY"

Since 1977, there has been a sustained increase in the proportion of the MOH Centralized Agency budget expended on personnel. This growth has occurred at the expense of the share of the budget allocated to machinery and equipment, and most recently, materials and supplies. In 1977, the relative shares of the total Centralized Agency operating costs spent on personnel vis a vis materials and supplies was 55:43. Thereafter through 1984, with only one exception--1981, the trade-off of materials and supplies for personnel was a continuous. By 1984, the ratio of these two categories' funding levels grew to about 92:7.

The growth in personnel expenditures can be caused by an increase in the salary levels, an increase in the number of personnel, or some combination thereof. At the start of this period, much of the increase in the personnel costs of the MOH's Centralized Agencies was generated by increases in the number of personnel. The rapidly expanding infrastructure alone has been estimated to have accounted for an increase of Centralized Agency personnel (and more specifically, or Regional Health Services personnel) of slightly more than 2,000.

3

Although the total number of visits to all MOH facilities has not consistently fallen in recent years, there are a number of factors that would suggest that had the quality of services remained unchanged, their utilization would have been expected to have increased rather substantially.

The rate of increase in the number of Centralized Agency personnel (i.e., all MOH employees with the exception of the Decentralized Agencies--which consist primarily of the 14 hospitals) peaked at an annual rate of 6.9 percent in 1977. Thereafter, it followed a generally constant rate of decline, becoming negative in 1982, and has since remained about constant (at about -0.3 percent).⁴ The absolute number of total Centralized Agency personnel (the Regional Health Services and the MOH Central Office--Secretaria de Estado) grew from 9,046 in 1975 to peak in 1981 at 12,716. Focusing

specifically on only the Regional Health Services component, personnel grew from 8,517 in 1975 to 11,934 in 1981, and fell slightly to 11,827 in 1984.

Over the course of the last ten years, both the absolute and the relative rates of real remuneration of the major types of MOH medical care providers have changed dramatically--especially since 1978.⁵ Physicians, nurses, nurse auxiliaries and sanitary inspectors have all suffered substantial erosion in the real purchasing power of their MOH-derived incomes. Doctors have fared the worst. Since 1978 part-time physicians, hired exclusively to provide medical care for two hours per day, five days per week, (this class constitutes the bulk of MOH physicians) experienced an average annual reduction in their real salary of about eleven percent.

The levels of real income for the nurses, nurse auxiliaries and sanitary inspectors are not nearly as consistent. Their general erosion has been periodically slowed and (much more frequently earlier in the decade) occasionally the downward trend has been temporarily reversed. Considered as three individual categories of workers, in no year have nurses, nurse auxiliaries, or sanitary inspectors experienced as large a drop in their MOH-derived income as have physicians. The cumulative effect of these trends has been least for nurse auxiliaries. As a group, they have experienced a rate of decrease in their real income of about one-fifth the level of doctors. The ratio of doctor to auxiliary salaries has fallen markedly from 1.76 to 0.81 over the 1975 to 1986 period.

Comparing the 1975-1977 average number of full time equivalents (FTEs) of doctors, nurses and nurse auxiliaries to their 1982-1984 levels, the relative number of physicians has increased, that of nurses has remained about constant, and auxiliaries has decreased.

⁴These figures do not include contracted labor or health board (patronato)-funded positions, and thus actually understate the totals.

⁵

The Consumer Price Index (CPI), developed by the Central Reserve Bank of El Salvador, was used in the adjustment process.

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Not controlling for differences in patient case mix, changes occurring over time in the medical care team division of labor, differences in the quality of care received, or the possibility of changes in the levels of other inputs, the "productivity" of doctors, nurses and nurse auxiliaries together (as measured by the "output" of medical visits per FTE) fell by 1.8 percent between 1975 and 1984.

Analyzing changes the "productivity" of each of these individual personnel categories (and bearing in mind the aforementioned caveats) nurses' productivity increased by 41.4 percent, auxiliaries by 3.6 percent, while that of physicians fell by 15.7 percent. In part these changes in relative productivity are attributable to some modifications in the structure of MOH service delivery.

- (1) The increasing delegation of some duties previously performed only or primarily by doctors to both auxiliaries and nurses. These activities include primarily well-baby clinics, family planning and other maternal child health (MCH) services.
- (2) The growth in the number of physicians in administrative positions, as (generally part-time) directors of health centers and units. Between 1975-1978 and 1982-1984, the average number of units increased about 18 percent from 84 to 99, and the average number of centers increased 50 percent from 8 to 12.
- (3) The approximately two-fold increase over this time period in the number of personnel comprising rural mobile health units. Generally consisting of a physician, a nurse and less frequently an auxiliary nurse, such teams would be expected to have lower "productivity" because because a large proportion of their time is spent in "unproductive" travel. This would reduce overall medical personnel productivity and would suggest that especially nurses relative to doctors had even greater "productivity" gains elsewhere in the MOH system.
- (4) Changing relative levels of real remuneration. From 1975 to 1985, the cumulative fall in physicians' real purchasing power totaled 63 percent. Nurse auxiliaries lost the least, about 12 percent. Nurses have had an intermediate experience--having lost 28 percent in real terms. Although this does not help us to understand why the "productivity" of nurses grew nearly 12 times faster than that of auxiliaries between 1975-1977 and 1982-1984, it may be part of the reason for physicians' "productivity" loss: it may have undermined their incentive to work as hard as they had previously. This may also account for the development and implementation

of the quota system governing the minimum number of patients per hour a physician is expected/required to treat.

Identification of the specific roles of these various factors and their importance in explaining changes in the relative "productivity" levels of these different MOH provider-types requires additional data and further study.

C. THE EARTHQUAKE OF OCTOBER 10, 1986

The impact of the earthquake on the public health care delivery system of El Salvador has been well documented by PAHO. The interested reader is referred to Appendix 3 which presents PAHO's analysis.

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V. TRIP ACTIVITIES

December 8: Arrive 4:30 (Salvadoran time, 5:30 EST). Baggage lost, claim filed. Arrive at Hotel Sheraton-San Salvador 6:30 (Salvadoran time).

Meet team member Sophie Koch-Weser (SKW). Most activities through December 12 are carried out jointly.

December 9: Meeting with P. Sue Gibson, Deputy Director of Human Resources/Humanitarian Assistance (HR/HA), USAID/ES and SKW.

Meeting with Kevin Armstrong, Population Officer (HR/HA), USAID/ES. He accompanies us to the Ministerio de Salud Publica y Asistencia Social (MSPAS, Ministry of Public Health and Social Welfare) for introductory meetings with:

- a) Dr. Jose Antonio Pereira Galvan, Director General of the MSPAS.
- b) Dr. Hugo Moran Quijada, Chief of the MSPAS Planning Department.
- c) Regina Guzman de Molina, Economist, Coordinator of the Pan American Health Organization (PAHO)-MSPAS-USAID Earthquake Rehabilitation team (i.e., the Nucleo Tecnico Asesor).

Meeting at PAHO offices attended by SKW, Gibson and PAHO representatives, Victor Pou-Howley (Engineer with PAHO-El Salvador), Dr. Humberto de Moraes Novaes, Regional Advisor of PAHO, Washington, and Eduardo Leite-Robeiro, PAHO team architect to discuss PAHO-MSPAS-AID preliminary plans and strategy for the rehabilitation of the earthquake damaged metropolitan public health care delivery system. Dr. Novaes explains (and as he has set forth in his two "Informe de Viaje" documents) that PAHO is hoping to take advantage of the earthquake tragedy to initiate long run plan to rationalize public health services in the metropolitan area. The plan is dubbed the PMS, Programa Metropolitana de Salud (Metropolitan Health Program). JLF and SKW are informed that at this moment, the plan is still in the conceptualization stage. Receive preliminary plan documents and background materials:

- a) Informe de Viaje, El Salvador, Terremoto del 10 de octubre de 1986, Comentarios Informe Consultores, STC/OPS/contrados por

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el Banco, October 27-November 5, 1986, Dr. Humberto de Moraes Novaes, PAHO/Washington.

- b) Informe de Viaje, El Salvador, November 17-26, 1986, Dr. Humberto de Moraes Novaes, PAHO/Washington.
- c) Report-1: Inspection of the Damaged Hospitals in San Salvador, December 1, 1986, Michael L. Baltay.
- d) Desarrollo de la Propuesta: Tres Etapas, MSPAS y Organización Panamericana Salud (OPS), December 1986.
- e) Componente: Mantenimiento y Conservación, Ing. Angel Viladegut H., Consultor OPS/OMS, December 1986.
- f) Plan Regulador de Reconstrucción del Sistema de Salud del Área Metropolitana, with cover letter to Sue Gibson from Dr. Raul Pareres, PAHO/ES Director, dated November 14, 1986.

Meeting at AID office with SWK, receive documents:

- a) Hospital Rosales, Informe de Diseño Preliminar, Hector J. Diaz, STV/Lyons Associates, Inc., August 8, 1986.
- b) Provisional Space Requirements of the Public Health Care System, October 31, 1986, Kevin Armstrong, Mary Saavedra, and Deborah Kennedy, AID/ES.
- c) Memorandum from Kevin Armstrong, HR/HA to Ronald Witherall, AMDO on Needs for Hospital Benjamin Bloom, October 31, 1986.

Begin review of said documents.

December 10: Contribute review of said documents.

Site visits to MSPAS Centro de Salud-San Bartolo and Hospital San Rafael with Carmen Elena Cortez, Architect, Engineering Division; Regina Guzman de Molina, Economist, Department of Planning, MSPAS, Coordinator of PAHO-MSPAS Nucleo Tecnico Asesor, and SKW.

Meeting with Sue Gibson at AID.

Meeting at PAHO offices with SWK and members of the Nucleo Tecnico Asesor team members, Eduardo Leite-

Robeiro, Ing. Pao-Hawley, and Dr. Novaes to further discuss PMS to further discuss PMS, CPM, and construction, design, and cost factors.

Receive documents:

- a) Questionnaires to be used in January-February 1987 to collect data from facilities.
- b) Encuesta de Area de Influencia y Numero de Poblacion Cubierta de Los Unidades en la Area Metropolitana, Eduardo Leite-Robeiro, December 1986.
- c) Consolidado de la Capacidad Fisica Instalada Unidades de Salud de la Region Metropolitana, November 27, 1986.

Ing. Pou-Howley introduces SKW and JLF to PAHO/ES Director Pareres.

Meeting with Sue Gibson and Kevin Armstrong, (individually).

December 11:

Individual meetings with Sue Gibson, Doborah Kennedy, and Kevin Armstrong (the latter is also attended by SKW) to request guidance and direction, and to seek additional sources of information, in particular the numerous documents secured by the Health System Support Project PP team (which included JLF), and which was to be developed into a library.

Receive and begin review of documents:

- a) Muestreo Para Evaluacion Fisica de los Establecimientos de Salud en El Salvador, Rodriguez Rochac Ingenieros Contratistas, 21 Avenida Norte 1734, Colonia Layco, Tel. 25-4434, 26-4955. (1) Informe Preliminar Sobre El Muestreo a Los Localidades de Salud en El Salvador, June 12, 1986; (2) Informe Final.
- b) Metodologia Integrado de Programacion de Servicios de Salud (version revisada), June 1986, MSPAS, Direccion de Planificacion de Servicios de Salud, Departamento de Programacion Proyecto Vitalizacion de Sistemas de Salud (VISISA); Dra. Celia de Salazar, Jefe Unidad de Programacion, Direccion de Planificacion de Servicios de Salud; Dr. Juan Perez, Unidad de Programacion; Sr. Maria de la Paz Sanabria, Enfermera, Unidad de

Programacion; Dr. Reinaldo Grueso Ortega, MD, M.Sci, MPH, Asesor de Planificacion de Salud, HID/Kraus, Proyecto VISISA.

- c) Anexos, Documentos Basicos Para La Programacion de Algunos Insumos, Salazar, et. al., ibid.
- d) Unidad de Aprendizaje por Auto-Instruccion de la Metodologia Integrada de Programacion de Servicios de Salud, June 1986, Salazar, et. al., ibid.
- e) Aspectos Socio-demograficos Relacionados con los Servicios de Salud: Revision Comparativa 1979-1985, Prognosis 1986-1989, Alex A. Alens Z., Luis Antonio Bermudez C., Victor Guirola Z., June 1986, MSPAS, Proyecto Health Systems Management Project Paper Contribution.

Begin review of said documents.

December 12: Meeting with PAHO Nucleo Tecnico Asesor PAHO team member Ing. Pou-Howley to discuss and clarify several PMS issues, including: (1) the number and types of public health facilities to be included in the PMS; (2) the rationale for the geographic demarcation of the PMS--specifically its not being contiguous with the MSPAS Metropolitan Health Region; (3) the role of the private sector; (4) the role of the Instituto Salvadoreno Seguro Social, ISSS (Social Security Institute). We are told that these are important, but as yet unresolved, issues, and told that while PAHO is interested in discussing these and other substantive issues, there would be no time to address these or any other substantive issues until January 1987 at the earliest, as the PAHO team was fully occupied with putting together the Master Plan to formally present to the Minister of the MSPAS Friday, December 12. Neither AID officers nor AID TA consultants (SKW and JLF) are invited to meeting with MSPAS officials. The Minister, we are told, will review the plan over the week-end. The document (it is not clear if it will possibly be revised or not) will be distributed early next week. This will be the first time AID officers or AID TA consultants will see the Master Plan. It is not clear at this time how different the Master Plan presented to the Minister is from the preliminary documents presented AID officers and consultants. Pou-Howley informs SKW and JLF that PAHO will have completed the first phase of the PMS at the

completion of the day, and will resume work on January 5, 1987. In essence, all work on the PMS is halted until then, although the AID TA team and officers before then can (a) review the Master Plan (if it is made available as promised), and (b) can prepare baseline data on the pre-existing system.

Meeting with Sue Gibson and Deborah Kennedy (individually) to apprise them of PAHO's actions, decisions, and intentions. Kennedy locates Health Systems Support Project Paper Team Library. Obtain copies and begin review of:

- a) Kraus International Inc., 330 East 75 St., Suite 5B, New York, NY 10021:
 - (1) Premises for the Formulation of Cofinancing Options for Public Health Services, August 1985;
 - (2) Study of Periodic Costs of the Ministry of Public Health and Social Welfare of El Salvador, 1980-1984, August 1985.
- b) Ley de Presupuesto (various years), Ministerio de Hacienda, Direccion del Presupuesto.
- c) Ley de Salarios con Cargo al Fondo General y Fondos Especiales de Instituciones Oficiales Autonomas (various years).
- d) Memorias, (various years), Ministerio de Salud Publica y Asistencia Social.
- e) Salud Publica en Cifras, (various years), MSPAS.
- f) Pan American Health Organization, Health Services Organization in the Event of Disaster, Scientific Publication #443, 1983, PAHO, Washington DC.
- g) University Research Corporation, Health Status Assessment and Health Policy Program Review, AID/ES, April 1985.

Site visit with SKW to Unidad de Salud de Barrios. Inspect facility and introduction to Director.

Meeting with Eduardo Pena, Economist, Economic and Commercial Section, Department of State, El Salvador. Receive documents: (1) Foreign Economic Trends in El Salvador and Their Implications for the United States, El Salvador, June 1986; (2) Department of State/El Salvador Communication, Reference No. A-014, March 23, 1986, Wages and the CPI in El Salvador, 1980-1985.

Discussed recent developments in the approach to civil service employment security, macroeconomic performance, and government stabilization policies.

Meeting with Luis Arriaga, Economist, AID/ES.

December 13: Continued review of documents obtained December 12.

Preparing draft report for REACH at AID.

Began MSPAS data extraction, compilation and entry (using AID Compaq 286), focusing on public hospitals' role, service configurations, and their recent performances, budgets, and costs.

December 14: Continue review of documents, work on report, and data compilation and analysis.

December 15: Team member SKW returns to USA.

Continue review of documents, work on report, and data compilation and analysis.

Meeting with Kevin Armstrong and Dr. Raul Guillermo Toledo of HR/HA. They provide me with several potential contacts.

Meeting with Deputy Director Dr. Castaneda and Juan Jose Bonilla, Statistics Department Chief, of the Metropolitan Regional Office of the MSPAS. They provide me with access to all monthly reports of all public health care regional facilities (hospitals, centers, units and posts). Begin to assemble a longitudinal data file (1980-1985) of service provision at all health units and hospitals in the metropolitan region.

Meeting with Sue Gibson to apprise her of findings and planned product by end of consultancy: a framework of key issues to be addressed in the PMS by the Nucleo Tecnico Asesor in addition to those contained in PAHO documents received to date. In addition, to the extent possible (bound primarily by the constraint of time), the PAHO-designed facility questionnaire will be further elaborated, and utilization and cost data will be analyzed with the aim of providing a baseline against which to evaluate the resource requirements, as well as the appropriate facility and service configurations of the yet-to-be definitively determined PMS.

December 16: Meeting with Jorge Mazini and Ing. Luis Oliva (Biomedical Equipment System Advisor), both

members of AID consultant team of Health Information Designs (HID) at the HID offices to discuss two hospital studies produced by Mazini, and to discuss potential strategies and contacts with both Mazini and Oliva.

Return to MSPAS Metropolitan Regional Office and continue work of culling service provision data from monthly health units' and hospitals' reports. Meetings with Regional Office Director Duran, Deputy Director Dr. Casteneda, and Statistics Department Chief Bonilla.

Continue reviewing documents, writing report, and data compilation, analysis, and entry.

December 17: Complete culling of data from Metropolitan Regional Office.

Meetings at MOH central office with (1) Sra. Dina Mata de Leiva, Chief, Financial Accounting Division; and (2) Dr. Juan Antonio Perez, Chief, Health Statistics Unit.

Allowed to "check out" of the Statistics Unit the last seven years of the originals of the annual report "Resumen de Actividades Hospitalarias" (which covers centers as well) for photocopying and entering into computer for further analysis.

Begin the process of culling the actual expenditures data of hospitals from the annual "Anteproyectos Presupuestarios de los Hospitales" which are the only disaggregated data (below a single line item entitled "running transfers") on the financing of hospitals to be found in the Central Office. It is submitted annually to Sra. de Leiva's shop.

Continue reviewing documents, writing report, and data compilation, analysis, and entry.

My suitcase finally arrives! Its reported to me that Challenge International Airlines has also located a box of materials (the last of my three), but that it no longer has a proper identification tag on it. I have to go out to the Airport tomorrow to describe and claim it. I cannot simply pick it up on my way out of the country Saturday AM because the warehouse holding it will not be open.

December 18: Continue reviewing documents, writing report, and data compilation, analysis, and entry.

Return borrowed materials to MOH Statistics Unit. Discuss data collection and compilation protocol with,

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Meeting with Sra. de Leiva, Chief, Financial Accounting Unit, MOH. Learn that all regional health services expenditures data (i.e., for all of the health centers, units and posts) are aggregated, and captured in the sum of (1) the single Centralized Agencies Budget program budget code 1.06 Operative Health Services, subprogram code 019 Regional Health Services, and (2) an indeterminable (or so it is reported) portion of the Centralized Agencies Budget program code 1.02 General Administrative Services, subprogram code 029 Departmental Supplies and Materials. The latter budget line item includes everything from office supplies for the Central Office (State Secretariat, Secretaria del Estado), to all of the State funded expenditures for bandages, medicines, and other supplies for all of the Centralized Agencies Health Service Units (i.e, all of the health centers, units and posts), as well as some (but only some since other monies from the Decentralized Agencies budgets are similarly used) for purchases of bandages, medicines and other supplies for the hospitals (as well as the handful of other significantly less financially important institutions). This aggregative a level of financial accounting effectively precludes accurate quantification of even the total budgets of the health centers, units, and posts. Moreover, there are not even breakdowns by health region.

December 19: Clarifications from Sra. de Leiva on the Hospital-rest of MOH budget splits.

Pick up last piece of my baggage at the airport.

Continue writing report.

December 20: Return to U.S.

VI. FINDINGS AND RESULTS

A. THE COINCIDENCE OF AID AND PAHO EFFORTS AND INTERESTS

Given the past record of donors frequently working at cross purposes in the health sector of El Salvador, it is imperative that the coincident of AID and PAHO interests and efforts in this project be explicitly noted and fully appreciated. It is also useful to bear in mind that the two agencies--while generally working independent of one another--have both identified essentially the same basic MOH structural and managerial deficiencies as the primary obstacles to a more efficient and effectively functioning public health care delivery system; viz., (1) an overcentralized administrative apparatus, (2) the existence of two, unintegrated health care services constellations--i.e., the autonomous, decentralized agencies (consisting primarily and most importantly of the hospitals) versus the regional health services, (3) the dysfunctional organizational isolation and operational divorce of the planning and budgetary units, and (4) the reliance on historical-budget-based resource allocation, rather than a needs-based or a priority-program-structured resource allocation criteria.

The approach of the two organizations in combatting these ills has been quite different. AID has generally been shorter term oriented. Wanting, for a variety of reasons, more immediate results, AID has focused more on the effects of these deep-seated, structural, and organizational ills. This approach is well illustrated by the VISISA project. VISISA has sought to improve the (1) drug supply, (2) transportation, and (3) biomedical equipment maintenance and repair systems, and (4) HAS introduced needs-based health planning (specifically, at this point to the Western Regional Office). As noted in the Background section to this report, these key sub-systems (the first three activities of VISISA) have been major problem areas plaguing the MOH and undermining the effectiveness, the efficiency, the utilization, and even the credibility of the public health care system of El Salvador throughout most of the last decade. In sum, they are irrefutably major shortcomings of the system, which together had (through 1985) synergistically come to threaten the viability of the system as it had historically evolved. AID's VISISA project under the direction of HID has recorded major progress in the performance of each of these sub-systems.

In contrast, PAHO generally has taken a longer term approach: its most conspicuous initiative perhaps being decentralization. AID generally has had very few patience with PAHO for precisely this reason; viewing this as an "ivory tower" approach, overly indulgent in the realm of conceptualization, and quite simply just taking too long.

Without question the best illustration of these characteristics of PAHO's work in Salvador, and its most conspicuous initiative

to date has been decentralization. This effort has been a very long time in the making. PAHO's efforts date from the middle of the 1970s. While the MOH only last July (1986) fully embraced this approach as worthwhile and, interestingly enough, as its "own". It is in the area of decentralization that PAHO and AID have been working most closely in unison--though it seems they have done so while remaining for the most part oblivious of their coincident of interests and their mutually reinforcing efforts. It is this PAHO conceptualized, long-time-in-the-making initiative which has provided AID with the type of institutional structural wherewithal necessary to effectively operationalize its shorter-term-goals oriented approach(es). Where would AID's efforts to introduce improved management practices and planning be if they had to be incorporated into the old, highly centralized, central office structure with control over only the regional health services (the health centers, units and posts--and not the hospitals) with less than 40 percent of the operative health services budget of the MOH, and saddled with a financial department which only accounts for expenditures and employs historical-budget based resource allocation?

The coming to fruition of the PAHO decentralization initiative--which has been a very long time in the making--makes it possible for AID to be able to focus on the shorter term, and to still have reasonable expectations about its hoped-for reforms becoming long term in their impact and duration; in short in their becoming institutionalized within the MOH. Without the decentralization initiative and the development of the regional offices it is likely that much of AID's work with the subsystems of drugs, and biomedical and vehicle maintenance and repair would prove evanescent. This is not to pass judgment on one approach or the other; both are important and have their place. Both seek the same ends; it is only their means which vary.

To state the obvious, explicit recognition of their being in tandem makes it more likely that the organizations might consider better coordinating their efforts in the interest of improving both of their performances/contributions. More immediately relevant, their joint participation in the PMS project and their working together--sharing experiences, information, viewpoints and knowledge of the health care delivery system of El Salvador can only serve to enhance the significance and contributions of both as they take better thought-out, more comprehensive approaches, and reduce both duplication of effort and their inevitably (to a lesser or greater degree) working at cross purposes. The end result cannot but be the further improvement in the functioning of the MOH and the improved health status of the people of El Salvador.

I have been caught in the crossfire between AID and PAHO, and feared for the first days of this assignment that the two organizations would not collaborate on this important project, and would thereby preclude its being pursued. At the risk of being dubbed "so much fluff" or "condescending", and in the hope of giving people some perspective (again), I feel compelled to

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toss ought a reminder. El Salvador has been ravaged by war for seven years now. There is enough internal turmoil in the country without those agencies which have come to "help" Salvadorans adding further to the strife. Clearly, different agencies with different missions, different structures, different approaches, and different experiences cannot be expected to become "one big happy family". One would hope, however, that (at the very least--for purposes of rebuilding the metropolitan public health care infrastructure that) their representatives can be professional and committed enough to develop an effective team: to make themselves more cognizant of and empathetic for their counterparts' positions, and to make every effort to keep all parties apprised of developments and participating in the on-going decision-making process of such an important and worthwhile project as the PMS. To date, both parties have some of the blame to share as the following narrative illustrates. It is written so as to apprise the two agencies of the other's activities and oversights regarding the project to date, in the interest of lubricating their future working relationship as team members of the PMS.

At this moment, it appears that if AID is to have input into this important project that it will have to accept what PAHO (working with the MOH) has established as the starting point. Geographically this means dealing with a subsection of the Metropolitan Health Region. Structurally, it means three 200-bed, secondary care (community) hospitals each fed by a network of health units (each of which, in turn, services 40-65,000 people). This is not to say that AID must accept this as the definitive plan, as PAHO team members would be quick to agree. Rather, as this document should make abundantly clear (and as PAHO team members assured SKW and myself when we raised theretofore unresolved and/or unaddressed issues in our discussions with them) it is the starting point from which the project will evolve. These issues, as well as a series of others which PAHO has yet to even raise, await resolution by the Nucleo Tecnico Asesor. Although neither I nor AID has as yet seen the so-called "Master Plan", this must surely be the tone of that document as well. In the event that such is not the case, however, unless PAHO and/or the MOH has undertaken an incredible amount of work which I and AID have not been privy to (and has effectively addressed the plethora of the presumably unresolved and/or unaddressed issues which I raise in the next three sections of this chapter--and which, by virtue of their time-consuming nature, is most improbable), sight unseen one could not but characterize the "Master Plan" as seriously deficient.

Unfortunately, AID has been largely left out of the planning and negotiating process to date. Although Kevin Armstrong of AID was to have served as liaison, and with the direction of Don Witherall, took the lead for AID on health facilities concerns following the earthquake, he was not fully apprised of the PAHO-led PMS initiative.

It is recommended that at least one AID officer be appointed to the Nucleo Tecnico Asesor. This is essential to AID having timely, first hand knowledge and input into the development of the PMS. The lead AID person to date has been P. Sue Gibson (PSG). She was contacted by PAHO only after she had left El Salvador for a two week trip to the United States. The first official PAHO effort to apprise AID of the PMS and to include the agency in the planning process consisted of PAHO/ES Director Raul Paredes' letter to PSG dated November 14, 1986. The letter (see Annex 1) clearly implies that PAHO at that time anticipated having a complete and very specific plan in terms of the number and types of facilities to be built, as well as the specific service configurations, and concomitantly, their implied supply and equipment needs.

The timing of the development of this detailed plan and the need for the subsequently developed AID TA team (SKW and JLF) was a source of misunderstanding and poor communication, and as such constituted a major stumbling block for a smoothly functioning PAHO-AID (officers, not TA consultants) team, at least at the time of the arrival of AID's TA team. In addition, this outcome of this misunderstanding was that the AID TA team could not fulfill their original scopes of work. Much of this work will still need to be done in the future.

Not having clearly defined what was to be built, or what types of services would be provided and where, it would not be possible to determine either the capital costs or the operating costs of the PMS design. From the Critical Path Method (CPM) developed by the PAHO team (see Annex 2) it would appear that at the very earliest this activity will be undertaken in March 1987.

It is not clear if the mix up was due primarily to the miscommunication regarding the dates during which PAHO's request to AID for the subsequently contracted team (no dates were specified in Paredes letter which would seem to imply immediately), or if PAHO subsequent to the Paredes letter had to engage in much more involved and protracted negotiations with the MOH than it had anticipated.

PAHO and the MOH did in fact engage in a rather involved process of negotiation. The initial MOH plans--that of the Planning Directorate Chief Hugo Moran Quijada (one of the most powerful decision-makers in the MOH)--were based on the construction of 4-100 bed hospitals. PAHO's first salvo in the battle was Dr. Humberto Novaes' critique of the MOH plan, and his counter proposal of three 250-300 bed hospitals (the document is presented in Annex 3).

That the negotiation process was of both an involved and timely nature further heightened AID's frustration of not being asked for input or allowed to participate. This frustration was further heightened to the point of becoming counterproductive in developing closer relations with PAHO once PAHO did offer the opportunity for participation. Furthermore, this consultant was

given the distinct impression that PAHO/El Salvador was, in essence, forced to bring AID into the process either (a) by a PAHO/Washington initiative/directive or (b) by the Interamerican Development Bank (IDB or BID), which--in either case--only served to further alienate AID representatives. (Background Note: According to this latter version, upon being approached by PAHO with the PMS, BID had made further considerations as to whether or not it would underwrite the (still nebulous) scheme dependent on its receiving the approval of AID TA experts.)

Given this (from AID's perspective, very frustrating) chain of events, so as to still make effective use of the TA team, a new scope of work was negotiated on a verbal, evolutionary, and ongoing basis between JLF and PSG. The final agreement reached was that I would develop a framework of key issues which should be addressed by the Nucleo Tecnico Asesor; both elaborating on those contained in PAHO documents received to date and those as yet unaddressed by PAHO. In addition, to the extent possible (bound primarily by the constraint of time) utilization and cost data would be analyzed with the aim of providing a baseline against which to evaluate the resource requirements, as well as the appropriate facility and service configurations of the yet-to-be definitively determined PMS.

B. THE PAHO QUESTIONNAIRE

In the second report of Dr. Novaes in which the fundamental strategy for rehabilitating the Metropolitan Health Region's earthquake-devastated infrastructure within the confines of a still evolving long term health plan are set forth, an interview instrument for gathering the data to be inputted into the ultimate design of that system is presented. That document is entitled "Recuperacion de la Capacidad Instalada", and includes a brief, single page introductory explanation for the survey, both of which are contained in Annex 4. The form, while acceptable as far as it goes, does not go far enough. It is focused exclusively on capital items--i.e., facilities and equipment--and ignores other aspects of service delivery essential to the effective planning the proposed system.

More specifically, the focus is exclusively on the supply side of the medical care marketplace, and even there it is inadequate. Most notably, there is a preoccupation with "things", while the human element--health care providers and their support people, and administrators/managers and administration/management practices are neglected. In sharp contrast, the demand side of the market--patient needs, their willingness and ability to pay for services(which of course is closely related to the issue of financing such services), and, in general, their health care behavioral patterns are entirely unaddressed. Furthermore, questions exploring the interaction of these various factors (i.e., the interaction of supply and demand) which determines the actual levels of utilization realized are conspicuously lacking. Although most of these additional considerations relate to recurrent costs (by identifying personnel needs, by casting light on management practices in the interest of improving productivity) some also relate to the principal focus of the PAHO questionnaire. For instance, the findings regarding the patient intake system (pre-registration queueing, registration, and queueing again in the "final" wait before actually seeing a provider) suggest that it would probably be more efficient to structure the facility to clearly demarcate and more expeditiously accommodate the associated patient flow. In another example (one pointed out by PAHO), the issue of standardizing user fees and the patronato system implies the need for a billing and collection room (and large enough for intimate conversations of personal finance to take place in).

As this example illustrates, PAHO team members are cognizant of (at least) some of these issues. As of yet, however, they have not thought through the first step in addressing this (and similar such issues); they have yet to develop a data collection methodology . This is not intended to be an indictment of the questionnaire, and should not be construed as such. Rather, it is simply intended to point out that this is a very important area still requiring a great deal of additional work.

A still unresolved consideration is who at each facility is to be interviewed. It would be most desirable to interview a number of individuals. It is unlikely that any single individual knows all there is to know about every operational aspect of the facility. Moreover, it would be worthwhile to know if there are discrepancies in perceptions among the personnel at a single given facility. Hence in the interest of enhancing both the validity and the reliability of the information collected it would be desirable to interview several different persons. The most attractive potential interviewees would be the director of the facility, physicians, nurses, the patronato manager, and finally auxiliaries and other personnel.

Obviously the more persons who are interviewed the more time consuming and expensive this phase of the project becomes. Hence there is a tradeoff between data reliability and validity, on the one hand, and project costs and time lines on the other. Determination of the optimal tradeoff is ultimately an iterative process involving the specific questionnaire and the types of data it generates. In these early stages of development of the project it is necessary to draft a first version of the instrument, estimate interviewing time, conduct a pilot test, and from the size and significance in variations in responses obtained within a given facility, determine the potential gains of interviewing additional personnel.

Below are listed some important issues and sample questions which are designed to provide information to fill some of the aforementioned (anticipated) analytical holes. This list is not definitive; it merely serves to elucidate the additional types of data which merit further discussion as to whether or not they should be collected. It is important to consider them at this time because they could be relatively easily and inexpensively "piggy-backed" onto the facilities/providers questionnaire. They are not arrayed in order of significance.

I. PROVIDER PERCEPTIONS OF ACCESS TO CARE, HOURS OF SERVICE, AND UNFULFILLED (INEFFECTIVE) DEMAND

1. Is the use of your facility fairly constant throughout the course of a week, or are there particular days of the week which are usually busier? Why do you think it is busier on those days?

Do you turn patients away on that day?

What do you do if at the end of the regular hours of consultation there are still persons wanting to be seen?

How often does this happen?

How many people are generally involved?

Do you know what people do if they are not able to see a doctor or nurse before the end of your day? For example, do they go to a pharmacist? a private doctor? Do they return to your facility the next day?

Do you think it would be useful to extend the hours of consultation at your facility? From the physicians' perspective, do you think it would be best to begin the hours of consultation earlier in the morning, or extend them longer into the afternoon, or add additional hours in the evening? Which approach do you think patients would prefer?

II. MANAGEMENT PROTOCOLS, MANPOWER NEEDS AND POTENTIAL BOTTLENECKS TO SERVICE PROVISION

1. THE PATIENT INTAKE PROCESS

Please describe to me the average patient's experience at your facility; what happens to them from the time they arrive, to the time they leave your facility.

Are patients queued? If so, explain how. When are patients registered? What types of information are maintained? How is the registration process different for those who have already used your facility compared to new patients?

Do you have any type of patient registration card? Would it be easier or faster for you if patients kept a registration card which they presented to you upon arrival at your facility? How many people in your facility are involved in patient registration? What do they do when they are not registering patients--when it is a slow day or in the afternoon, after consultation hours are over?

2. WAITING TIME

How long do people usually have to wait at your facility before being registered? Before seeing a nurse? Before seeing a physician?

3. THE TRIAGE PROCESS

Do patients see a nurse before seeing a physician? If yes, why-- what does the nurse do? Is this procedure always followed? If not, how frequently is it? Are there two stages to the intake process--registration and triage? or are these activities performed simultaneously? or not at all?

III. USER FEES, COST RECOVERY, AND THE PATRONATO SYSTEM

1. What proportion of patients at your facility contribute to the patronato fund?

2. Please describe the patronato fee schedule. What is the suggested voluntary contribution for different types of services, supplies, medicines?

3. Please describe the process by which people pay. Who asks them to pay? When in the process of their receiving care are they asked to pay and when do they pay?

4. How is it determined who cannot pay the full amount of the fee? Are such people asked to make a partial contribution?

5. Do you think people would be willing to pay three colones per consulta? four colones per consulta? five colones per consulta? If not, what do you think they might do if fee schedules were raised? Would they (a) simply request a reduction in the fee or a waiver on the grounds they could not afford the higher fee; or (b) would they seek care elsewhere? If so, where do you think they might go? A private physician, a pharmacy, etc. Or (c) would they go without care?

6. Do you think people would be interested in annually paying a set fee (for example, five or ten colones) to receive a card (which could double for their patient registration card, or alternatively their payment of said fee could be indicated thereon) entitling them to discounts on the standard patronato fee schedule for the year?

7. How much did the patronato fund for your facility take in in last year? (If such records exist: How much has been taken in in each of the last five years?) Has the importance of the patronato fund been changing much in recent years? How has it changed? Why has it changed?

8. What are the patronato funds used to purchase? Is there a (at least an approximate) breakdown in terms of types of purchases (e.g., medicines, other supplies, personnel)?

9. What proportion of patronato funds are raised from user fees as opposed to community fund raising and other activities?

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IV. PERCEPTIONS OF THE MEDICAL CARE MARKETPLACE

In recent years the use of health units and posts has been on the decline in this area, and throughout the country as a whole. At the same time, the use of hospital outpatient departments has increased rather substantially.

What do you think may have contributed to these trends?

What has been the experience of your facility? What types of factors has affected the people coming to your facility for care?

Where do people in this area who do not come to your facility seek medical care? Why do they prefer to go elsewhere? What do you think could be done to improve your facility? to improve the care you provide? Do you have any suggestions as to how to improve the general level of public health care in the country? In specifically the health units? centers? hospitals?

C. UNRESOLVED OR UNADDRESSED ISSUES, AND SOME PROPOSED PROJECT GUIDELINES AND METHODOLOGICAL APPROACHES

1. ISSUE: THE APPROPRIATENESS OF EXISTING TREATMENT REGIMENS.

One Example: A Case Study of Tuberculosis.

Determine the present treatment regime of treating TB in the hospitals. From the number of beds devoted to its treatment, it appears that this is an unnecessarily expensive approach (i.e., its overly bed-intensive, and cost-ineffective). This, of course is subject to the identification of acceptable, appropriate medical standards, which would need to be identified by a TA team of medical experts. (There has as yet been no other indication--i.e., by PAHO--of the need for such assistance. This analyst would anticipate the need for a significant role for such a team in defining adequate and/or appropriate service configurations, and their implied equipment, machinery, drugs, and supplies requirements.)

Once alternative, acceptable treatment modalities have been identified, they should be costed-out so as to be able to identify the cost-effective configuration and various tradeoffs involved in selecting one approach or some combination of approaches. The costs, quantities and tradeoffs of these treatment regimens may then be compared to the current approach being used to treat TB in hospitals (most notably Neumologia, but others as well) as a chronic bed-requiring disease.

2. ISSUE: COST EFFECTIVE SERVICE PROVISION: APPROPRIATENESS OF FACILITY AND SERVICE CONFIGURATIONS

An effort should be made to quantify the total cost/consulta; total cost/inpatient day; administrative costs/consulta and per inpatient day (IPD); health service provision costs/consulta and per IPD. These estimates should be made for the different levels of care at which they are provided in order to identify the cost-effective site and characteristics of service delivery (and implied equipment, supplies and personnel needs), and the tradeoffs between efficiency, effectiveness, and access and utilization which alternative approaches or combinations thereof imply/embody. Comparisons of hospitals vs centers vs units should be made to the extent that data is available for latter two or some acceptable proxy measures can be developed. This task has been partially addressed in this report in the section of this chapter entitled "Empirical Findings".

3. ISSUE: THE METROPOLITAN MEDICAL CARE MARKET AND THE ROLE OF THE PRIVATE SECTOR

A prerequisite to ascertaining what the most desirable facility and service a configuration for the metropolitan area might be, is knowledge of what the metropolitan health care market consists of at present. On the demand side of the market, there is a need to know about the types of illnesses people have and seek care for, who they seek care for different types of ailments from, why they turn to different types of providers and facilities, and what they are willing and able to pay for the care they seek.

The MOH has good epidemiological data. It also maintains good records on the levels of utilization of its different facilities, much of which is disaggregated by the specific type of MOH provider visited, and the specific type of care provided. There is very little information, however, about the private sector. Nor is there any (other than anecdotal) information about what motivates consumer choices of when to seek care, where to seek care, or from whom to seek care.

Fortunately HR/HA of AID has contracted to have a study of the private sector conducted in January 1987. This study, to be carried out by Alex Alens (of IPM, San Salvador), will consist of developing an inventory of private sector providers and resources. In addition HR/HA has recently completed an inventory of pharmacies in the San Salvador area. These studies will provide useful baseline data about the size of the private sector, and its relationship--both present and potential--with the public sector.

Unfortunately, there will still be almost only anecdotal data about the determinants of demand for medical care in general, and, more specifically, the demand for particular types of providers. It appears that this will not be the case for long, however. As part of the new AID/ES Health Systems Support Project due to begin in 1987, there are several studies which will be conducted which will provide useful information to fill this otherwise gaping hole of knowledge. It is essential, therefore, that the activities of the PMS be coordinated with those of the new project so as to enable taking full advantage of the potential crossfertilization which their at once complementary and supplementary natures proffers. (As will be discussed below, there are other aspects of these two major undertakings which further underscored the desirability of their being coordinated.) There is Definition of the health care market--drugs and private providers. Give latter opportunity to bid on HMO style contractual care.

A variety of possibilities for incorporating the private sector into this program need to be considered. Private doctors (perhaps through the local medical association, the Colegio Medico) should be sounded out for interest in (1) participating in HMO-type arrangements to provide care particularly in areas where damaged or inadequate MOH facilities have had low levels of

utilization; (2) selling or renting existing unused or underused clinics and/or hospitals to the MOH (there are several such facilities in the Metropolitan region); (3) renting or gaining free access to MOH facilities during the presently generally unused afternoon or evening hours. This latter possibility would enhance access to and utilization of care, while minimizing MOH outlays for so doing. It might be found preferable for the MOH to subsidize the treatment of these otherwise private patients (perhaps to the tune of its average cost of an outpatient visit).

Finally, the possibility of private sector management of MOH hospitals should be investigated. Although the experience internationally with this technique has been mixed, it potentially provides the opportunity for significant reductions in administrative costs, and in the efficiency of service provision. The probability of this possibility would be increased if additional incentives are structured to so motivate the contractor.

4. ISSUE: TRADING OFF EFFICIENCY AND ACCESS--SHOULD THE PROPOSED HOSPITALS PROVIDE ONLY INPATIENT SERVICES OR SHOULD THEY ALSO PROVIDE OUTPATIENT SERVICES?

Would it be preferable to build the new hospitals with outpatient department (OPD) facilities. If they are built and if the historical tendency (which has existed since 1977) of falling and/or low levels of drugs, supplies, and adequately maintained equipment in the other-than hospitals facilities (and especially in the health units and posts) is sustained, it is likely that these department will be burdened with a disproportionate share of the demand for outpatient services, while the proposed units will be sparsely utilized relative to capacity. In that event, depending upon the level of use of the proposed new units, it is almost certain that these new units will have relatively high unit costs (i.e., the average cost of a consulta will be relatively high). In that event, it might prove cost-effective to not build the proposed units, but rather to plan to accommodate the relatively greater (and still increasing) demand for medical outpatient visits at the proposed hospitals.

There are other, countervailing considerations, however, which merit analysis and evaluation. First, the construction cost of a hospital outpatient department is considerably greater than that of a health unit. According to estimates of Salvadoran Engineer Aldo Miranda (a member of HID, AID's contractor on the current health project, VISISA), AID TA consultancy team member Koch-Weser, and PAHO/ES engineer Victor Pou-Howley, the cost per square meter of a hospital in El Salvador ranges from \$500 to \$635, while that of a health unit ranges from \$300 to \$350. Given this marked difference--of approximately a factor of two--this is a decision which must be carefully considered.

A second important consideration is that if hospital-based outpatient facilities are constructed, access to health care

would in all probability be seriously eroded--perhaps not relative to the current configuration, but certainly with respect to the potential of the new, proposed system. These facilities would come to constitute bottlenecks throttling the ability of Salvadorans in the metropolitan area to obtain care. Moreover, it would exacerbate the waiting time price which Salvadorans would, perforce, have to "pay", and thereby reduce the utilization by undermining their ability to secure services. The end result would likely be a marked increase in unfilled demand for care with more would-be-patients being turned away from public health facilities without having received the care they had felt they needed.

Drug and vehicle maintenance and equipment preventive maintenance programs suggest that many of the motivations for falling utilization levels of units and posts and concomitantly increasing use of hospital OPD depts. are likely becoming less and less relevant. The very structure of the proposed system (viz., hospitals without OPDs will reverse this trend and result in greater efficiencies.

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5. ISSUE: FINANCING THE PROPOSED SYSTEM--RECURRENT COSTS

As discussed in the Background section of this report, the MOH has been increasingly stapped by financial--and specifically recurrent cost--constraints. These have been of such a long term duration, that, when coupled with the continued reliance on historical-budget based approach to resource allocation that the situation has slowly evolved into a crisis. The most conspicuous manifestation of the crisis has been the growing shortages (much of which has been reversed in recent months primarily through the efforts of the VISISA project) of drugs, supplies, and equipment, machinery, and building maintenance and repair.

There are essentially two different approaches to dealing with this problem. The first is to improve the efficiency of the existing system so as to reduce the level of costs. The second approach is to supplement the Central Government/Central MOH Office provided funds with locally generated monies. The latter of these two possibilities will be discussed first.

The response of MOH providers has been to turn to voluntary user fee charges levied and collected through the community-based institution of the patronato. Beginning in earnest in the early 1980s, patronato funds have grown significantly due primarily to

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My suggestions regarding increased revenue generation, improved efficiency, and, more generally, effective resource enhancement are presented in my July 1986, "An Economic Analysis of Segments of the Public Health Care Sector of El Salvador". With the exception of the call for a construction moratorium, the discussion is equally pertinent to the PMS plan.

user fee contributions. Consideration should be given to standardizing the fee schedule and collection procedures, and to raising the fee schedule.

Specifically for purposes of the PMS it is noteworthy that the Metropolitan Health Region had the lowest regional level of contributions per consulta provided in the country from 1983 to 1985. Although it would be optimal to await some of the results of the proposed household health interview and medical expenditures survey for more definitive evidence regarding the specific structure and level of fees, this suggests that fees could be/should be raised in the Metropolitan area's public health facilities and standardized to ease the MOH the impact of the recurrent cost crisis on services.

Similarly consideration must be given to drug charges. There is (again largely anecdotal) evidence that Salvadorans would be willing to pay more for drugs they obtain at subsidized rates or free of charge from MOH facilities. Again, results of the household interview survey would be useful to determining which drugs and what fee levels would be optimal.

Turning to the other possible approach for coping with the recurrent cost problem, i.e., improving the efficiency of MOH services, given the other major reform efforts currently taking place in the MOH--which are to be complemented and supplemented with the activities of the HSSP--we can expect the MOH to be better positioned in coming years to anticipate/plan for and to more effectively deal with recurrent costs.

Therefore it is recommended that to the extent that recurrent costs of the proposed addition to the metro health care infrastructure are greater and appear at this time to likely be problematic in the coming years, that: (1) one of the major economic analyses or operations research studies proposed in the HSSP project consist of a detailed, longitudinal analysis of the management practices, efficiency and productivity of the hospitals, and, to the extent that disaggregated data is available to provide the wherewithal, of the health centers and units (at least those units in the Metropolitan Region), as well. Such analyses can provide invaluable information about the costs of alternative service configurations in different types of facilities. (2) With or without the knowledge provided by the studies noted above, and with the benefit of the structural and functional reforms currently being operationalized in the MOH, if (as is likely) it appears as though the MOH will remain saddled with a severe recurrent cost crisis, international donor support should be sought for assistance with said costs, as this it may be convincingly argued is something of a temporary short term ("cash flow") crisis, which, if short run "solutions" to the earthquake-devastation will be ameliorated/alleviated faster, but in a long term less desirable (more expensive in terms of monetary costs, reduced access and utilization potential). In short, it must be borne in mind that the system currently being

planned will constitute the heart of the health care delivery of El Salvador for the next quarter century, and that accordingly a long term planning horizon is appropriate.

D. EMPIRICAL FINDINGS

This section briefly discusses a potpourri of empirical findings about the health units and hospitals. Most of the findings address aspects of cost or utilization-related issues. I collected the health units' utilization data at the Metropolitan Regional Health Office. The original source of the data is the "Informe Mensual de los Actividades" of each of the health facilities (posts, units, centers, and hospitals), which is reported to the Regional Office on a monthly basis, and then aggregated for quarterly reports. I obtained the hospital data from the Ministry's Financial Accounting Division. The source of this data is the "Anteproyectos Presupuestarios de los Hospitalias", which is submitted annually to the Division.

HEALTH UNIT FINDINGS

UTILIZATION

Exhibit 6 presents the number of physician-provided consultations in each of the Metropolitan Region's 23 health units from 1981 to 1985. From a brief scanning of the table, one is immediately struck by the number of facilities which have low levels of utilization. The questions begged are: Are there presently too many health units in the region? Can some of the units be closed? Or, in the event that new units are to be built (the PMS proposes building 13 new unit facilities) should some of those presently existing be physically and operationally aggregated with others?

As a type of objective benchmark with which to gauge whether or not a particular unit is "too" small in reviewing Exhibit 3 it should be borne in mind that the Ministry of Health has established six consultas per hour as the minimal acceptable number of consultations for its physicians. While I was not able to ascertain the propriety of this presumption, I assume that this target relates to the "average" MOH physician; i.e., those who are employed by the Ministry for only two hours per day. The target of six consultas per hour equals 12 per day; leaving an average of ten minutes per consultation. Assuming that each of the units is staffed by three part-time (two hours of consultations per day) physicians, there are 1,440 physician consultation hours per year (3 physicians times 2 hours per day times 5 days per week times 48 weeks per year). Given the foregoing assumptions, minimal adherence to the MOH quota of six consultas per hour requires the average health unit provide (at least) 8,640 consultas per year.

Using this number as a reference/evaluation cutoff point we can see from Exhibit 3 that five of the 23 health units are underutilized. Still, other considerations such as the

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EXHIBIT 6

METROPOLITAN REGION HEALTH UNITS' SERVICE PROVISION, 1981-1985

HEALTH UNIT NAME	TOTAL CONSULTATIONS				
	1981	1982	1983	1984	1985
1 San Jacinto	40,085	43,299	45,627	43,513	39,637
2 San Miguelito	35,116	36,108	35,364	34,783	32,674
3 Concepcion	27,497	28,188	35,536	36,273	34,215
4 Barrios	32,481	30,563	33,980	33,646	32,668
5 Monserrat	14,429	14,799	14,796	13,833	11,972
6 Lourdes	18,581	19,787	21,545	21,252	18,421
7 Zacmil	27,605	27,448	28,689	27,489	25,536
8 Mejicanos	24,828	30,706	34,966	38,846	36,380
9 Cuscatancingo	12,838	13,681	13,406	12,818	10,096
10 Ciudad Delgado	26,161	25,778	26,372	23,899	20,960
11 Soyapango	24,769	25,253	26,792	27,342	24,264
12 Santa Lucia	6,228	7,503	9,464	8,252	8,366
13 San Martin	9,105	8,652	7,984	8,778	8,983
14 Apopa	19,366	14,358	12,261	19,177	12,344
15 San Marcos	10,073	12,578	12,006	11,534	10,129
16 Santo Tomas	5,972	6,534	6,185	6,568	5,324
17 Nejapa	8,083	9,361	8,746	9,863	10,383
18 Guazapa	5,887	5,298	5,036	7,392	7,437
19 Aguilares	12,962	13,985	12,366	15,732	13,933
20 Tonacatepeque	6,917	6,372	4,038	6,597	4,341
21 Anatepec	7,268	10,022	15,133	16,719	16,483
22 Abad	15,168	19,824	21,125	18,838	14,457
23 Santiago Texacuangos	4,089	5,376	5,574	6,015	4,782

closest alternative source of care should be examined before electing to phase-out these facilities in the PMS, or before hastening to close these five; i.e., the impact on access to care of doing so should first be examined. This is an topic requiring closer study.

It seems probable that at least some of these 23 facilities, especially those in the Metropolitan San Salvador area, where physicians have long been overwhelmingly concentrated, and where the population has long been attracted for medical care, are likely to have more than the standard number (three) of physicians. To the extent that this is true, the average annual number of patient consultations presented in Exhibit 6 would have to be greater than the 8,640 minimum identified earlier to achieve the minimum MOH standard. The earlier stated preliminary finding that there are five ostensibly sub-standard health units (defined with respect to their level of useage), therefore, must be regarded as conservative: it is likely to provide an overly optimistic picture in terms of unit and physician "productivity" (as measured by this admittedly crude measure).

This finding warrants further analysis than the limited data gathered during this trip is able to afford. In determining what the appropriate course of action is, the past history of utilization patterns and their causes (noted in the Background Section of this report, and detailed in the author's "An Economic Analysis of Segments of the Public Health Care System of El Salvador", July 1986), and the fact that many of the utilization pattern-conditioning factors are changing (viz., the availability of drugs and other supplies in "low-level" facilities) must be borne in mind. Behavioral patterns of the past should not be regarded as intractable parameters determining the configuration of the future system. They should, instead, be regarded as responses to a variety of related perceptions and incentives provided by the present structure--both of which can be altered. In short, the situation is a dynamic one, and must be regarded as such. The as yet uncharted future holds the potential of new possibilities: it is those possibilities which at this time we must try to envision. Then we must mold and direct the system so as to make the most desirable, yet feasible, envisioned end-state(s) a reality.

Toward this end, special effort should be made to further investigate WHY the levels of service provision/utilization have been so low at those 5 facilities which have provided on average fewer than six physician consultations per hour throughout the past five years. These facilities are providing services at relatively high unit costs because of their low service provision records; i.e., their productivity and efficiency have been sub-optimal. Is their record attributable to low demand? If so, what factors have contributed to low demand? Is it that there are adequate

alternative providers and preferred providers located closeby (in terms of travel time and/or travel cost)? If so, construction, reconstruction, or maintenance of these facilities may not be warranted. Alternatively, is physician behavior or some other supply-related factor primarily responsible for the low numbers of consultations provided? If so, how can these factors be altered to improve the access to, utilization of, and/or efficiency of these services? Clearly, further analysis is called for if the Metropolitan Region's public health system is to be rationalized.

THE HEALTH UNITS' DRUG PRESCRIPTION AND DISPENSING PRACTICES AND ITS RELATIONSHIP TO UTILIZATION

It is generally believed that Salvadorans use a disproportionate and unnecessarily large amount of medicines (see, for instance, the July 1986 Operations Research Technical Report Contribution to the Project Paper by Barton Burkhalter and Jaime Benavente). It is widely held that both public and private medical care providers in El Salvador over-prescribe medications.

Exhibit 7 presents various indicators of utilization and characteristics of service provision by the twenty-three health units averaged (the arithmetic mean) on an annual basis, and over the five year period of interest. Column One of the Exhibit presents the annual average number of patient consultations by physicians per patient at a single (the average) unit (note, this does not include those provided by nurses or dentists).

From columns two and three it may be seen that the number of prescriptions (written and filled) per person served (at least once in the course of the reporting year) and the number of prescriptions per consultation at the units has consistently fallen each year from 1981 through 1985. On the other hand, the number of consultations per person (column one) has increased each year until 1985 (when it fell from its 1984 level, but still remained greater than all other previous years). This suggests that the units were developing a more intensive relationship with its patients. In light of the fact that total utilization fell through most of this period, it suggests that while the number of persons frequenting the units decreased, those who did use these facilities were more ill and/or were more faithful to them (i.e., used fewer alternative sources their own choice, or perhaps because they could not afford others).

It may be that MOH providers, increasingly constrained by low levels of drugs and other supplies, have come to alter their fundamental treatment regimens, substituting more consultations for particular types of health problems for

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EXHIBIT 7

METROPOLITAN REGION HEALTH UNITS'
 AVERAGE SERVICE CHARACTERISTICS, 1981-1985

YEAR	CONSULTATIONS PER PERSON	PRESCRIPTIONS PER PERSON	PRESCRIPTIONS PER CONSULTATION
1981			
Mean	2.041	6.642	3.324
S.D.	.604	2.842	1.359
Max.	4.264	13.106	7.192
Min.	1.063	2.705	1.899
1982			
Mean	2.118	6.097	2.945
S.D.	.588	2.411	1.129
Max.	4.676	12.644	5.822
Min.	1.232	3.368	1.759
1983			
Mean	2.139	5.606	2.660
S.D.	.672	2.369	.894
Max.	4.856	13.967	4.866
Min.	1.222	2.682	1.449
1984			
Mean	2.177	5.323	2.455
S.D.	.992	3.093	.907
Max.	7.074	18.617	4.703
Min.	1.490	2.361	1.287
1985			
Mean	2.140	4.988	2.287
S.D.	.693	3.012	.806
Max.	5.356	17.766	4.106
Min.	1.415	2.219	1.109
All 5 Years			
Mean	2.101	5.658	2.722
S.D.	.681	2.792	1.109
Max.	7.074	18.617	7.192
Min.	1.063	2.219	1.109

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increasingly scarce medications. This implies that in the Metropolitan Region as a whole that utilization of public health care services has actually increased (as measured by the total number of persons served). In light of the fact that this occurred while the Metropolitan Region (specifically the department of San Salvador) was increasing (between 1980 and 1984) at an average rate in excess of four and one-half times that of the second most rapidly growing department, Sonsonate, (4.09% versus 0.89%) and at an even higher rate relative to that of the second most rapidly growing health region, means that Salvadorans were either (a) foregoing medical care, (b) were turning elsewhere (to the private sector or other public health care facilities), or (c) were increasingly relying on non-professional or self-treatment of illnesses.

Moreover, given the falling level of income per capita of the country throughout this period and an assumed income elasticity of demand for public health services greater than one, but less than that of the private medical care sector, one would anticipate that use of the public health care system would be increasing throughout this era.² This assumption is based on findings from around the developing world. From what evidence is available (only anecdotal) this also appears to be true of El Salvador. That is, as income increases, people become better able to afford relatively more expensive private

²Income elasticity of demand is a measure of the sensitivity of demand to changes in income levels. Technically it is the percentage change in income divided by the percentage change in the quantity of the good demanded. If this ratio is equal to once, the share of income spent on the good in question remains constant--and since income is increasing, this means increasing absolute expenditures on the good. If the income elasticity of demand is greater than one, the good is characterized as a "luxury"; people respond to increasing income by increasing their purchases of the good at a rate even faster than the pace at which income is increasing. In this particular case--medical care is generally thought to be so characterized--both the absolute amount of money and the relative share of income spent on the good increases. If the income elasticity of demand is less than one, the good is described as a "necessity". As income increases, the share of income going to purchase "necessities" decreases; the absolute amount of monies (colones) spent on them, however, could be increasing or decreasing. All of these relationships can be turned around as well. If income is falling, the share of income being spent on a luxury will fall more rapidly than the rate at which income is falling. Given that the income elasticity of demand for all medical services is thought to be greater than one, but that of public services is smaller than that of private services, one would anticipate a shifting of demand and utilization from the private to the public sector when income falls.

medical care, and generally increase their use of it relative to public services. On the other hand, when income is falling, as it has been in El Salvador for seven years now, the tendency is for people to forego their preferred, more expensive, and now less affordable, private medical care--and to instead use less expensive, MOH-provided services. That in the face of falling income, MOH service utilization continues to fall, is troubling. L

Furthermore, given that epidemiological data from 1981 through 1985 do not show marked reductions in "need" for medical care, it suggests that some other factor was discouraging public health service utilization. As noted briefly in the Background section to this report, it would seem that this "other factor" was what economists would regard as changing consumer tastes: the (probably accurate) perception that the reduced availability of medicines and other supplies in public health care facilities (specifically units) was so marked as to compromise the quality of care which could be, or in fact was being, provided in such facilities.

The dearth of information about what motivates Salvadorans to select a particular type of provider or facility over another, precludes being able to distinguish between these possibilities or determine if there are other factors involved. As noted elsewhere in this report, this is the type of information a household health and medical care utilization interview survey could provide, and which is sorely needed if the rationalization of the public health care delivery system of San Salvador (and more generally, the country as a whole) is to be predicated on much more than anecdotal evidence and intuition.

HEALTH UNIT COSTS AND BUDGETS

There is no single identifiable budget line item in the MOH budget for the services it provides in any of its centralized agencies, i.e., for any single health center, unit, or post, or any sub-aggregation thereof. The all-but-nondescript, aggregative budget line item sub-program code 019 Regional Health Services under program code 106 Operative Health Services contains the overwhelming share of the budget for all non-hospital services. These include inpatient services (which are provided primarily at the centers, though a very limited number are also provided at the few units with six or eight beds) and outpatient services. The rest of the budget for Regional Health Services comes out of sub-program code 029 Departmental Supplies and Materials under program code 102 General Administrative Services, which is split with the Central Office (Secretaria del Estado) and the Hospitals.

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The only method available for accounting for the costs of providing health unit services is to track the various in-kind "contributions" (medicines, supplies, equipment, machinery, personnel, amortized building expenses, repairs, and maintenance, etc.) made by the Central Office and to monetize and aggregate these. Obviously such an effort would require more than the two weeks available to the author. Therefore this important piece of information is missing from the baseline data against which to compare the proposed PMS. Although there are a number of alternative possible methods available for developing an estimate, none was made.

HOSPITALS

OUTPATIENT DEPARTMENT SERVICES

There is no information about the cost of outpatient services provided by the fourteen hospitals of El Salvador. In an effort to develop an estimate, I gathered data on utilization and what I hypothesized to be the principal distinguishing characteristics of the hospitals which would account for variations in their costs. These included the variables presented in Exhibit 8. I then developed a regression model to explain variations in the cost of the 14 hospitals using a pooled cross sectional, time series analysis. This provided 70 observations; an adequate number for developing an estimate of outpatient consultation provision costs with an acceptable level of confidence. Before turning to the actual equation estimated, it is important to first discuss regression diagnostics. The next section briefly discusses the issue of regression specification and diagnostics; specifically it discusses the different functional forms specified and estimated, why the one reported is the preferred estimate, and the degree to which the estimated equation adheres to the underlying assumptions of the regression model (and hence the degree of confidence we may have in the results).

a) Regression Diagnostics

There are several different functional forms which are theoretically appealing and hypothetically acceptable specifications for a cost function. The ones fitted are (1) a simple linear form, (2) a semi-logarithmic form, (3) a logarithmic form, and (4) a quadratic form. The two forms involving logarithms (and especially the log-log specification) generated standardized residuals which although they generated an equation with a far smaller standard deviation, were regarded as second-best because their standardized residuals deviated significantly from a normal probability plot and because they manifested a relatively

EXHIBIT 8

INDEPENDENT VARIABLES INCLUDED IN THE REGRESSION EQUATION ESTIMATES

- YEAR_i:** $i=1981, 1982, 1983, 1984$: A dummy variable equal to one if $i=1981$ and the current year is 1981, equal to zero if it is not. (1985 is the reference year, omitted dummy variable.)
- HOSP_j:** $j=1, 2, \dots, 14$: A dummy variable equal to one if $j=1$ and the current hospital being observed is code number 1 (see the codes at the end of this Exhibit) and equal to zero if it is not. (Hospital Rosales is the reference hospital, omitted dummy variable.)
- TOTALBED:** The total number of staffed (available) beds in the hospital reported for the year.
- TOTALADM:** The total number of admissions into the hospital during the year.
- TOTALLOS:** The overall average length of stay of all inpatients during the year.
- TOTALOPS:** The total number of operations performed in the hospital during the year.
- RECETAS:** The total number of prescriptions written and filled by the hospital during the year.
- XRAYs:** The total number of xrays performed at the hospital during the year.
- LABEXAMS:** The total number of laboratory examinations performed at the hospital during the year.
- INJECTN:** The total number of injections provided at the hospital during the year.
- TC:** The total annual operating cost (actual expenditures) of running the hospital.
- ALLVISIT:** The total number of physician-provided outpatient consultations, dental visits, and emergency care consultations provided during the year.
- MEDVISIT:** The total number of physician-provided outpatient consultations provided during the year.
- DDSVISIT:** The total number of dental visits provided during the year.

URGVISIT: The total number of emergency care consultations provided during the year.

ENFVISIT: The total number of nurse-provided outpatient consultations provided during the year.

HOSPITAL CODES NUMBERS:

- 1: Francisco Menendez, Ahuachapan
- 2: San Juan de Dios, Santa Ana
- 3: Sonsonate, Sonsonate
- 4: San Rafael, Nueva San Salvador
- 5: Dr. Luis Edmundo Vasquez, Chalatenango
- 6: Maternity, San Salvador
- 7: Benjamin Bloom, San Salvador
- 8: Psiquitrico, San Salvador
- 9: Neumologia, San Salvador
- 10: Santa Gertrudis, San Vicente
- 11: Santa Teresas, Zacatecoluca
- 12: San Pedro, Usulután
- 13: San Juan de Dios, San Miguel

Rosales is the reference hospital, the omitted dummy variable.

greater degree of heteroskedasticity. In addition, because many of the variables which were intuitively/theoretically appealing to specify as logarithmic functions had one or two values equal to zero or missing, that it reduced the degrees of freedom by an unacceptable amount.

The quadratic form, was specified for two reasons: (1) to test for the hypothesized existence of economies of scale, and (2) as an intermediate step to specifying a cubic total cost function (i.e., one capable of exhibiting increasing returns to scale in some ranges of output, and constant returns to scale and decreasing returns to scale in other output ranges. The quadratic specification performed so poorly that the cubic function was never even estimated. Most of the linear terms with quadratic counterparts did not enter the equation because of too low a level of tolerance (i.e., they did not add even 0.00001 percent to the explanatory power of the equation). The quadratic terms, on the other hand, generally entered the equation, but were nowhere close to any acceptable level of significance.

The first and most simple specification, a simple linear function, proved to be the best in terms of the fitted equations' standardized residuals most closely approximating a normal probability plot and the standardized scatterplot of the residuals against the predicted values showing the least signs of heteroskedasticity. This is the only functional form reported here. In all of the equations specified, 1985 served as the benchmark year (it is the omitted year for the series of dummy variables included to control for any systematic changes in the total cost of the hospitals as a whole during this period), and Hospital Rosales is the benchmark hospital (it is the omitted hospital for the series of dummy variables included to control for the unique characteristics of any particular hospital).

b) THE REGRESSION RESULTS

Turning first to Equation #1 (presented in Exhibit 9), the model does a very good job of explaining variation in El Salvador's 14 hospitals' total costs between 1981 and 1985: 99.5 percent of total variation is explained. The equation has an F Statistic of 507.67, and is significant at far beyond the 99.9 percent level of confidence.

Equation #1 specifies two variables representing outpatient consultations: ENFVISIT, all outpatient consultations provided by nurses, and ALLVISIT, which aggregates all outpatient consultations provided by physicians, dentists, and all emergency care visits. As may be seen in Exhibit 6, the provision of an outpatient visit by a nurse actually reduces the total cost of a hospital by 83.61 colones. This is probably a statistical artifact. The ALLVISIT coefficient

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EXHIBIT 9

POOLED CROSS SECTIONAL, TIME SERIES REGRESSION RESULTS
(N=70)

EQUATION #1

VARIABLE	COEFFICIENT
ALLVISIT	4.97366**
ENFVISIT	-83.62773***
TOTALBED	1247.52532*
TOTALLOS	6463.71857
TOTALADM	3.80020
XRAYs	20.65916**
INJECTNS	.30542
LABEXAMS	-.44120
RECETAS	.38780
TOTALOPS	-2.34595
Adjusted R2	.995
F Statistic	507.67***

** designates statistically significant at or above the 95 percent confidence level.

*** designates statistically significant at or above the 99 percent confidence level.

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EXHIBIT 10

POOLED CROSS SECTIONAL, TIME SERIES REGRESSION RESULTS
(N=70)

EQUATION #2

VARIABLE	COEFFICIENT
MEDVISIT	41.07965***
DDSVISIT	17.32046
URGVISIT	11.01192**
ENFVISIT	-83.61238***
TOTALBED	1333.68506**
TOTALLOS	-10746.70543
TOTALADM	1.73610
XRAYS	30.66772***
INJECTNS	.22765
LABEXAMS	-.05829
RECETAS	.21364
TOTALOPS	-3.68234
Adjusted R2	.994
F Statistic	436.47***

** designates statistically significant at or above the 95 percent confidence level.

*** designates statistically significant at or above the 99 percent confidence level.

reveals that each outpatient visit provided by a physician, or a dental visit, or in an emergency situation increases total costs by 4.97 colones.

Since the ALLVISIT variables aggregates what are quantitatively and qualitatively very different types of services, Equation #2 (see Exhibit/O) which disaggregates them was specified. The adjusted R square of this equation is a tiny fraction smaller (99.4 percent in this instance), and the F Statistic is smaller (436.47), the fit of the equation is still exceptionally close. This equation is also significant at far beyond the 99.9 percent level of confidence.

The ENFVISIT coefficient in Equation #2 is identical to that of Equation #1. This is encouraging: it is a manifestation of what is referred to in statistical parlance as "robust". It is manifested by a relatively stable relationship, which is evidence of a strong and relatively well-identified underlying set of relationships.

Diaggregation of ALLVISIT yields three new variables; MEDVISIT, outpatient consultations provided by physicians, DDSVISIT, dental consultations, and URGVISIT, emergency care provision. The DDSVISIT variable is insignificant: we cannot be confident of the estimated contribution of dental consultations to the total cost of a hospital in El Salvador. URGVISIT is significant, and its coefficient is 11.01: a single episode of emergency care as opposed to a single non-emergency episode of care adds an additional 11 colones to a hospital's total costs in El Salvador. MEDVISIT is significant and equal to 41.08. A single physician provided outpatient consultation adds about 41 colones to a hospital's total costs in Salvador.³

³The semi-logarithmic specification which regresses the log of total costs on the identical set of independent variables as those in Equation #2 yielded an estimate about one-quarter smaller. While deemed a less accurate estimate, for reasons noted in the text, this relatively similar number, lends further credence that the single best estimate developed is a reasonable one.

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VII. RECOMMENDATIONS AND REQUIRED FOLLOW-UP ACTION

1. It is recommended that AID seek to participate in the design and implementation of the PMS. The project, while still in the early stages of design, nevertheless holds great promise. The earthquake has provided an opportunity to begin the process of rationalizing the public health care system in the heart of the Salvadoran system. This project will determine the chief characteristics of the public health care system of El Salvador for at minimum the next three to five decades.

Moreover, it would seem that the MOH has so many other available donor-provided pots of money (from West Germany, Italy, France and Chile) that implementation is not contingent upon the participation of either AID or the IDB, or even PAHO for that matter. In an effort to improve the design and ultimate "product", AID should seek membership on and participation with the Nucleo Tecnico Asesor.

2. AID should make every effort to dovetail the PMS project with that of AID's new health project, the Health Systems Support Project (HSSP), and other AID-sponsored efforts in the health sector. At present, the type of information required to rationalize the public health care delivery system of El Salvador simply do not exist. Much of this information will be assembled and/or obtained as part of the HSSP. To the maximum extent possible the timetables of these two important projects should be coordinated. Also, their required efforts should be closely examined, and to the extent feasible jointly planned to minimize duplication of effort, while maximizing their effective resource availabilities and the quality of their products. In light of the availabilities of other pots of money (noted above), the HSSP may be viewed as a tantalizing carrot for obtaining and maintaining effective AID participation in the PMS: AID is far ahead of the pack in terms of having thought through much of the requirements of the PMS.

3. A technical assistance team of medical care providers must be incorporated into the PMS to (a) examine the appropriateness of current treatment regimes, (b) help develop epidemiologically-based (i.e., needs-based), service configurations, and (c) working with a health facilities architect and a health economist, help to develop the facility and equipment specifications of their proposed service configurations.

4. In conjunction with Recommendations 2 and 3, the various

unresolved and unaddressed issues documented throughout this paper need to be raised, investigated, assessed, and incorporated into the PMS.

5. Similarly, the original scopes of work for the health care facilities architect and the health economist will need to be fulfilled. Specifically, (a) additional work remains to be done in developing cost estimates of the existing MOH metropolitan health facilities; (b) an analysis of capital and operating costs of the various configurations of facilities and services which are proposed will need to be developed; and (c) methods for obtaining additional resources need to be examined--both via enhanced efficiency and increased revenue generation, will need to be examined.

APPENDIX 1

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Klement



ORGANIZACION PANAMERICANA DE LA SALUD
Oficina Sanitaria Panamericana. Oficina Regional de la
ORGANIZACION MUNDIAL DE LA SALUD

EDIFICIO CLINICA GINECOLOGICA. 4to. PISO
23 AVENIDA NORTE Y CALLE ARCS
TELE: 22-0825. 22-0824

CABLES: OPANPAN
TELEX: 20-088
APARTADO POSTAL: 1072
SAN SALVADOR.

REFERENCIA: ELS-DHS-010/28/3.1-2001

SAN SALVADOR, EL SALVADOR, C. A.

URGENTE

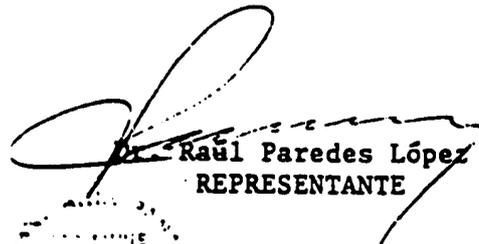
14 Noviembre, 1986

Srita. Patricia Sue Gibson
Directora Interina
Recursos Humanos y
Asistencia Humanitaria
Presente.

Estimada señorita Gibson:

Le envío unas líneas con las ideas generales sobre el plan regulador de reconstrucción del sistema de salud del Area Metropolitana, tratando de definir al final en forma macro, lo que esperamos nos ayude un Consultor de AID, integrado con los grupos nacionales y de OPS.

Le saludo muy atentamente.


Raúl Paredes López
REPRESENTANTE

*Hasta 11/29
Con anexo.*

*Sue Gibson
13155 Boon Creech Ave
MADEIRA BECH, FL 33708*

RPL/Adel.

PLAN REGULADOR DE RECONSTRUCCION DEL SISTEMA DE SALUD
DEL AREA METROPOLITANA

Las autoridades de Salud han considerado que la readecuación y reconstrucción de los establecimientos de salud dañados por el terremoto, se haga si guiendo un plan que permita a la población fácil acceso a los servicios.

Para esto se desarrollará una política de descentralización administrativa y desconcentración de los servicios.

Para esto ha dispuesto integrar un grupo nacional para que con ayuda de asesores internacionales procedan a elaborar el plan regulador.

Sus funciones principales serán:

- a) Definir tamaño de áreas de influencia.
- b) Determinación accesibilidad.
- c) Zonificación del Area Metropolitana.
 - Desconcentrar algunas especialidades
 - Incrementar el horario de atención al público
 - Mejorar el sistema de referencia y contra referencia
 - Facilitar la cooperación entre las distintas agencias del sector salud
 - Definir niveles de atención
 - Promover la participación comunitaria, etc.

Con estos y otros criterios se deberá establecer los mecanismos que permitan integrar técnica y funcionalmente el Sistema Metropolitana de Salud.

Para esto deberán formarse varios grupos que:

- a) Establezcan un plan de emergencia que incluya las actividades y acciones a ser desarrolladas para recuperar la capacidad operativa y función de los servicios de salud.
- b) Incorporar los ajustes programáticos, presupeustarios y administrativos para la recuperación y en una etapa posterior reorganizar todos los servicios de salud del país procurando acercar los servicios a la población.

Un equipo deberá integrarse y responsabilizarse de la elaboración técnica del plan y para proporcionarle apoyo logístico, de información, de administración y de control en la ejecución del programa, deberá tener grupos de apoyo.

Se ha contemplado poner a disposición del Gobierno personal internacional integrado por médicos (especializados en Administración Hospitalaria), administradores, arquitectos, enfermeras y economistas.

El Economista se ha pensado sea de AID y debe colaborar con el grupo que determine:

- a) Costos de los servicios propuestos.
- b) Costos de operación de los servicios.
- c) Posibilidad financiera del Ministerio para absorber los gastos.
- d) Posibles fuentes de financiamiento.
- e) Compatibilizar los calendarios de construcción con los correspondientes a gastos.
- f) Otras actividades.

APPENDIX 2

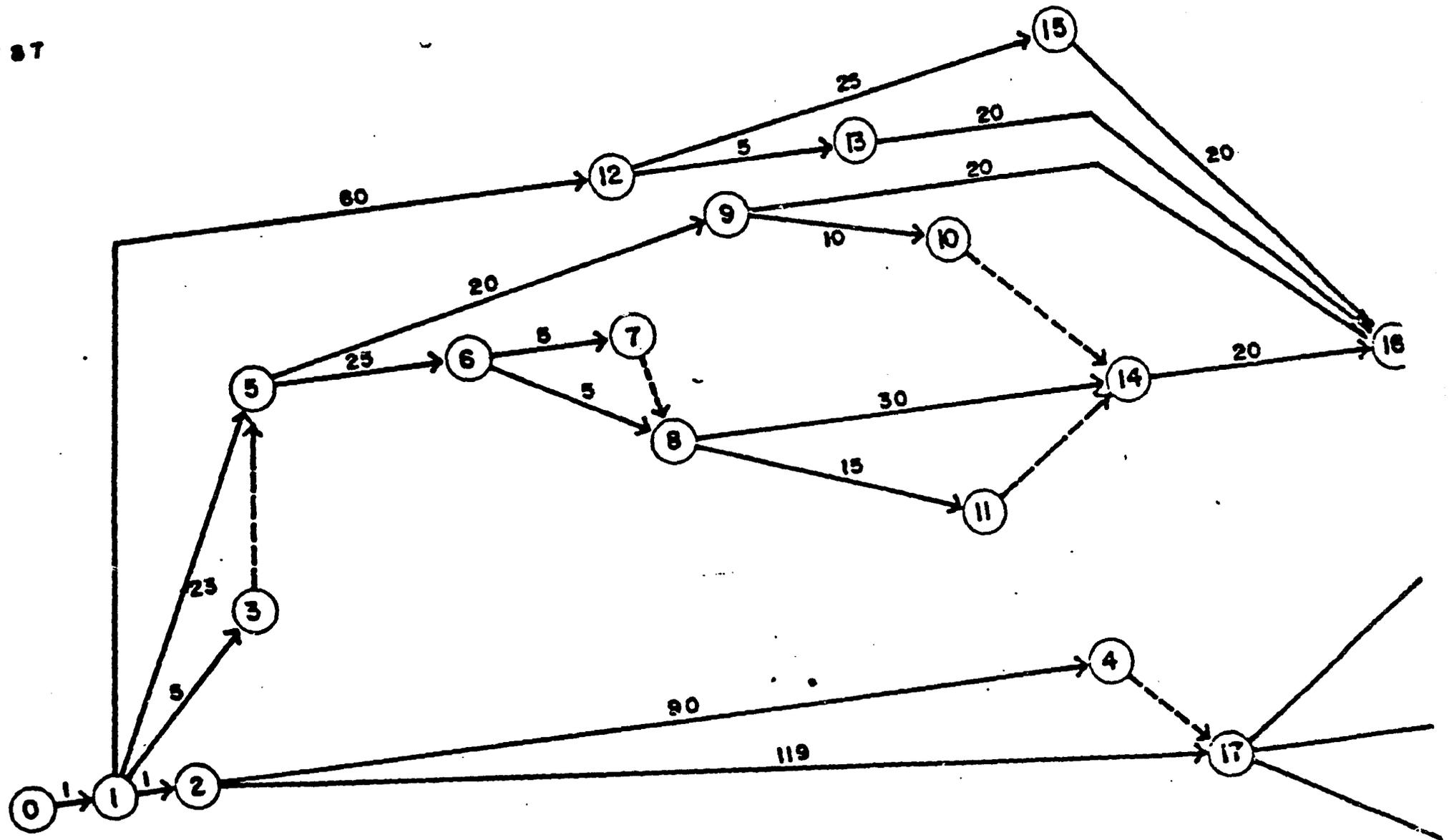
MINISTERIO DE SALUD PÚBLICA Y ASISTENCIA SOCIAL

DESARROLLO DE LA PROPUESTA
TRES ETAPAS

Acti- vidad No.	DESCRIPCION	Acti- vid. Prev.	Dura- cion Dias	Fecha de Fecha		1987		1988		1989	
				Inicio	Finaliz.						
01	Conformacion de Grupo de Trabajo integrado por funcionarios de MSPAS y Asesores de DPS para la ejecucion de C/U de las etapas.		1	05-01-87	05-01-87	*					
02	Asignacion de fondos y recursos	01	1	06-01-87	06-01-87	*					
03	Reorientacion de personal, asignando funciones	01	5	06-01-87	12-01-87	*					
04	Requerimiento de instalaciones y de equipo de 7 unidades de salud	02	90	07-01-87	12-05-87	*****					
05	Asociacion del diseno de subsistema de informacion epidemiologica, estadistica y administrativa para unidades de salud	01	23	05-01-87	05-02-87	****					
06	Configuracion de equipo de computo e implementacion de manuales para operacionalizar el sistema	05	25	06-02-87	12-03-87	*****					
07	Capacitacion de personal para implementacion del modelo subsistema de informacion	06	6	13-03-87	20-03-87	*****					
08	Implementacion del modelo de informacion	05	5	13-03-87	19-03-87	*****					
09	Diseno de los modelos de apoyo logistico (Suministros, transportes y comunicaciones)	05	20	05-02-87	05-03-87	****					
10	Capacitacion de personal para la operacionalizacion del modelo de apoyo logistico	09	10	06-03-87	15-03-87	*****					
11	Establecimiento de controles de personal	08	15	20-03-87	09-04-87	*****					
12	Desarrollar modelo de atencion comunitaria para cumplir la politica de descentralizacion y desconcentracion de servicio (Diseno y Prueba de modelo)	01	60	06-01-87	30-03-87	*****					
13	Instalacion del modelo de atencion comunitaria	12	5	31-03-87	05-04-87	*****					
14	Reportes de informacion para disaonibilidad de indicadores de gestor (informacion epidemiologica, estadistica y administrativa)	08	30	20-03-87	30-04-87	*****					
15	Educacion en salud para la comunidad	12	20	31-03-87	27-04-87	*****					
16	Aplicacion de todos los programas seriales anteriormente	02-13 14-15	25	01-05-87	04-06-87	*****					
17	Diseno y proyectos arquitectonicos para 17 servicios de salud de nivel 1 y 2 de atencion	02	119	07-01-87	22-06-87	*****					
18	Reformulacion de estimaciones programaticas para las nuevas construcciones	16-17	45	23-06-87	24-06-87	*****					
19	Preparacion de normas y procedimientos operativos (tecnicos y administrativos)	18	60	25-08-87	16-11-87	*****					
20	Construccion y habilitacion de unidades	17	117	23-06-87	02-12-87	*****					
21	Capacitacion de personal en normas y procedimientos operativos	19	30	17-11-87	26-12-87	*****					
22	Construccion de nuevos establecimientos detectados como necesarios para el 1ero. y 2do. nivel	17	472	22-06-87	12-04-89	*****					
23	Operacionalizacion de los modelos de descentralizacion administrativa	21	237	29-12-87	12-04-89	*****					
24	Fin de proceso	22-23	0	12-04-89	12-04-89						

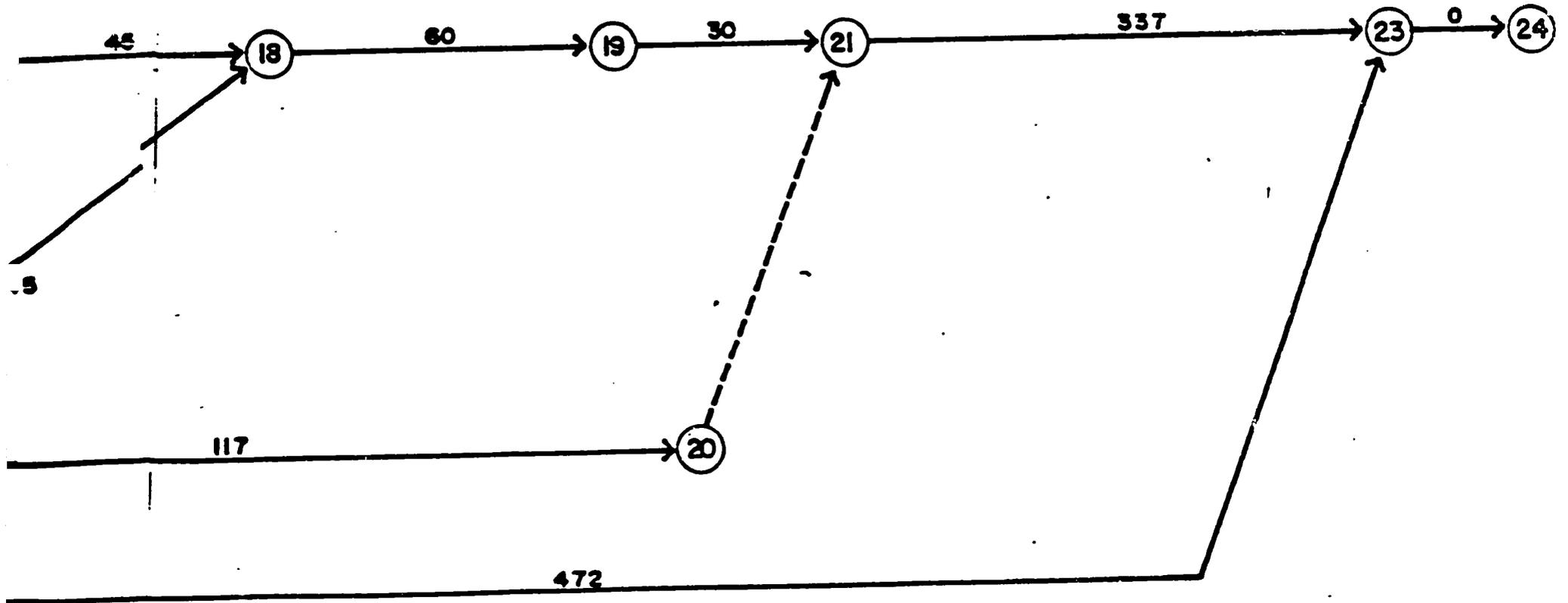
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MINIS DE SALUD PUBLICA Y SOCIAL
DESARROLLO DE LA F.O.PUESTA
TRES ETAPAS



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MICHAEL L. BALTAY

STRUCTURAL ENGINEER

9900 MILBURN DRIVE

SUN VALLEY, CALIFORNIA 91352

PHONE (818) 766-1249

December 1, 1986

Dr. Humberto de Moraes Novaes, Regional Advisor,
Pan American Health Organization
525 Twenty-Third Street, N. W.
Washington, D.C. 20037

Dear Dr. Novaes:

The Report-1, Inspection of the damaged hospitals in San Salvador, is enclosed.

I have not received the Emergency Seismic Regulations yet, which describes the legal lateral design forces.

Very truly yours,


Michael L. Baltay
Structural Engineer

Copy:

Dr. Raul Paredes
Organizacion Panamericana de la SALUD
Calle 2 No.279 Entre Loma Linda y Reforma
San Benito
San Salvador
El Salvador

Express mail

MICHAEL L. BALTAY

STRUCTURAL ENGINEER

9900 MILBURN DRIVE

SUN VALLEY, CALIFORNIA 91352

**PIB
PHONE (818) 768-1249**

December 1, 1986

**To: Dr. Humberto de Moraes Novaes, Regional Advisor,
Washington, D.C. and
Dr. Raul Paredes, Director, San Salvador**
From: Michael L. Baltay, Structural Engineer

**Subject: Report-1, Inspection, between November 12 and 19, of
the damaged hospitals in San Salvador due to earthquake.**

The Oct. 10, 1986 earthquake damaged the majority of the public hospitals. The magnitude of the earthquake was medium, 5.4 on the Richter Scale, which is based on the max. amplitude of the ground vibration. However, the intensity on the Modified Mercalli Scale 7 to 8 indicates a major earthquake damage, which is based on the reaction on the people and on the damages to the buildings. The epicenter of the earthquake was close to the downtown area where unfortunately the public hospitals are also located.

I have been requested to evaluate the structural damages and I have inspected several evacuated hospitals in San Salvador.

C O N T E N T S :

PERSONAL DISCUSSIONS

GENERAL OBSERVATIONS

**Structural Damages, Construction Practices
Lateral Forces
Summary**

INSPECTED BUILDINGS

**Rosales Hospital
Pathological Building
Surgical Building
San Jacinto Health Unit
Social Security Hospital
New Dining Hall and Kitchen
Machine Room and Laundry
Future Outpatient Building, 8 story
8 story building
Blum, Children's Hospital
Two story buildings
Twelve story tower
First of May Medical Unit**

PROPOSED STRUCTURAL ENGINEERING SERVICES

INFORMATION REQUIRED

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P E R S O N A L D I S C U S S I O N

I have met or had telephone conversation with the representatives of the following organizations:

United Nations, World Health Organization,
Pan American Health Organization

Dr. Carlyle Macedo, Director, Washington D, C.
Dr. Humberto de Moraes Novaes, Regional Advisor, Washington,
phone: 202-861-3239
Dr. Jorge Osuna, Washington D. C., phone: 202-861-3220

Organizacion Panamericana para la Salud
Calle 2, Casa 279, Col San Benito, San Salvador
Phone: 23-5616 and 23-5582
Dr. Raul Paredes, Director for El Salvador
Ing. Victor Pou Howley
Celia de Leon, Administrative Officer

Ministerio de Salud Publico y Assitencia Social
Calle Arce 827, San Salvador
Phone: 21-7553

Dr. Benjamin Valdez, Minister
Architectural and Engineering Division :
Phone: 21-7553 ext. 154 or 21-8534
Arq. Orlando Cruz, Chief
Arq. Jose Antonio Cordoba
Ing. Mauricio Sanchez
Ing. Cortez

US AID Mission

Peter Deinkin, Phone 23-5591
Susana Weber (USAID, APO Miami, Fla. 34023)

FBO (Foreign Buildings Office), US Embassy, Panama.
Phone in Panama: 27-1777, Ext. 250
APO Miami, FLA. 34002
Mike Rafferty

Administrators of the damaged hospitals.

Engineers and seismologists in the U. S. A.:

Robert Chieruzzi, LeRoy Crandall Soils Engineers, San Diego
619-458-9379

Dr. Anne Kiremidjan, Stanford University, California
415-723-4164

Dr. V. Bertero, University at Berkeley, California,
415-642-3655

Christopher Rojahn, US Geological Survey, California,
415-595-1542

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Morris Power, Geometrics Consultants, San Francisco,
415-957-9557

William Joiner, US Geological Survey, Menlo Park, Calif.,
415-323-8111

Anthony Shakal, Calif. Div. of Mines/Geology, Sacramento,
916-322-7490

G E N E R A L O B S E R V A T I O N S

STRUCTURAL DAMAGES AND CONSTRUCTION PRACTICES

The extensively damaged columns make the buildings unsafe. These columns must be underpinned immediately. The horizontal force resisting capacity of the buildings having extensively damaged columns is limited and a small earthquake or even a local failure of one single column (due to the reduced vertical load carrying capacity) may result in a partial or total collapse of the building.

In the evacuated hospitals at the lowest story, the majority of the concrete columns were damaged at the top, mainly due to the inadequate horizontal steel ties in the columns.

The horizontal forces generated by the earthquake is a direct function of the rigidity of the building. The brick walls between the concrete columns increase the stiffness considerably even if the walls are not of full height and do not reach the bottom of the floor above. There is an intention to provide a gap between the columns and the walls; the gap is filled with mastic. However, at the top of these half-height (6 or 7 feet high) walls 2-#3 horizontal steel dowels are projected from the walls into the columns, which provide an approx. 4 tons horizontal force transfer capacity between the walls and columns. This construction technique eliminates the intended separation.

The majority of the walls are unreinforced and this construction practice is not allowed in California: "All elements of masonry, brick or concrete, whether part of the structural system or the lateral force resisting system or not, are required to be reinforced (with steel) to qualify as reinforced masonry, ... Minimum reinforcing is required to assure that reasonable 'basketing' exists which will prevent cracked walls from losing broken pieces and thus presenting a hazard to building occupants. Such 'basketing' is especially important for all walls around exit passages ...". The repairing cost will be significant, in order to meet this design criteria. However, the Government may reduce this requirement.

The rigid concrete stairs are acting as bracing between the floors, which increase the rigidity of this part of the struc-

MICHAEL L. BALTAY

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ture. Consequently, due to the increased rigidity, increased lateral forces were transferred to this area, causing cracks in the concrete beams and in the adjacent walls. I have observed cracks around the stairs in every building.

The gaps for building separation generally are found to be small, causing the adjacent structures to hit each other.

After reviewing several damaged buildings, I conclude, that the majority of the hospitals were not designed for adequate lateral forces, especially the new dining room in the Social Security Hospital and the Pathology Building in the Rosales Hospital.

I could not determine the magnitude of the lateral forces used for design from the drawings, therefore I recommend that the structural drawings should indicate the lateral forces used for the design in the future.

There is no guarantee that the buildings were constructed according to the plans (e.g., Children's Hospital), therefore "as-built" plans are required.

LATERAL FORCES

Due to stiffening effect of the in-fill walls and partitions, these walls have received more lateral load, than that for which they had been designed.

I have not received a copy of the "Regulación de Emergencia para Diseño Seismico". However, I assume, based on discussions with local engineers, that the Regulation treats the earthquake force as a static equivalent load and does not provide information for advanced dynamic analysis, namely, the response spectra and the characteristic vibration of the soil (Ts).

The interaction of the walls and concrete frames, furthermore the irregularity of some buildings, which create horizontal torsion, mandate a full dynamic analysis in order to evaluate the observed damages and the behavior of the buildings during this earthquake and for the requirements for the redesign.

I will try to obtain some information, regarding the dynamic characteristics of the San Salvador region, from the Universities in California.

SUMMARY

By visual inspection, I feel that all the buildings, except the San Jacinto Health Clinic and the collapsed two story building in the Blum Children's Hospital may be repaired to resist a lateral force level similar to the magnitude generated by the October 1986 earthquake. To determine whether a building should be strengthened or demolished, shall be based on structural

MICHAEL L. BALTAY

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calculations and on a comparison of the cost for repairing and for a new building.

Since I had no access to the Emergency Regulation, I could not determine the magnitude of the required lateral force to be used for redesign of the buildings. I expect that the required design level forces will be higher than those experienced in the October 1986 earthquake.

I N S P E C T E D B U I L D I N G S

ROSALES HOSPITAL, PATHOLOGICAL BUILDING, 2 STORY

Some columns are cracked and these columns have no horizontal force resisting capacity.

By reviewing the structural drawings, my impression is that the building is not designed for horizontal forces. In the beams at the bottom only 2-#5 bars are continuous and the 2-#8 bottom bars are not continuous above the columns. This makes the beams unable to resist moments due to horizontal forces.

The partition walls generally do not go up to the bottom of the beams above and some of these walls are cracked. Extensive checking and redesign of the entire structure is required.

ROSALES HOSPITAL, SURGICAL BUILDING

There is no apparent damage to the concrete beams and columns.

Some of the half-height partition walls are cracked. Probably no, or minor, repairing is required, subject to a close inspection of the building.

The staircase adjacent to the Surgical Building is damaged. The stairs act as diagonal bracings, causing cracks in the concrete stairs and in the adjacent structure due to the increased rigidity in the structure. The demolition of this staircase is in progress.

SAN JACINTO HEALTH UNIT

Severe cracks due to inadequate structural design are found.

I concur with the recommendations of the investigation committee, that the building be demolished.

SOCIAL SECURITY HOSPITAL, NEW DINING HALL AND KITCHEN

MICHAEL L. BALTAY

The structure is unstable in transverse direction, and probably some modification is required in the longitudinal direction.

The struts and cross bracings shown in the drawings for the steel roof structure are not found in the existing structure.

Minor cracks are found in the half-height, interior partition walls, which do not go up to the roof level.

Checking or re-design of the structure for horizontal forces is required. There is a possibility, that the majority of the structural elements may be able to resist certain degree of lateral forces upon completion of the steel roof structure according to the drawings. This depends, to a certain degree, on the quality of the connections between the roof diaphragm and the walls. The construction cost will be minimal.

I do not agree with the investigator's committee, which recommended the demolition of this new building.

SOCIAL SECURITY HOSPITAL, MACHINE ROOM AND LAUNDRY

There are two concrete frames in the longitudinal direction. In the first frame, there is an approx. six feet high continuous wall are between the concrete columns. There are no walls in the opposite frame.

The columns with in-fill walls are damaged by the horizontal torsion in the structure due to the eccentricity created by the walls and the additional horizontal forces transferred to this frame due to the increased rigidity in this frame.

The columns at the opposite end of the building and the concrete beams are not damaged.

The damaged columns shall be repaired. There is a possibility, that these walls may have to be removed or separated from the concrete frames, subject to structural calculations. Steel bracings may be needed at the opposite column line in order to balance the rigidity and to avoid the horizontal torsion.

SOCIAL SECURITY HOSPITAL, FUTURE OUTPATIENT BUILDING, 5 STORY

The concrete columns are damaged at the bottom story, which makes this building unsafe.

No cracks are observed in the beams at all and in columns above the second floor.

By proper redesigning of the building, it probably may be saved. The horizontal torsion (if any) due to the asymmetric location of walls shall be checked. There are cracks around the concrete stairs; this typical problem is described under the "General Observations" above.

MICHAEL L. BALTAY

SOCIAL SECURITY HOSPITAL, 8 STORY BUILDING

Top of the concrete columns in the bottom story below the beams are damaged, which makes the building unsafe.

Cracks are not found in the beams at all and in the concrete columns above the second floor.

BLUM, CHILDREN'S HOSPITAL, TWO STORY BUILDINGS

The middle unit is collapsed.

The lattice curtain wall in the building at the short end is damaged.

I did not check the building at the long end. There is no apparent damage by observation from outside.

BLUM, CHILDREN'S HOSPITAL, 12 STORY TOWER

Only minor damage is observed in the concrete columns and beams.

The building was not constructed according to the plans. There is a corbel and building separation at Line-D. The architectural drawing at line D does not show any expansion joint.

Expansion (separation) joint seems to be small and it is 3 cm only on Drawing A-26 and Details 1-4.

There are cracks in the shear walls as well as in the half-height unreinforced partition walls. I could not determine the existence of the steel reinforcement in the exterior brick shear walls.

The lattice walls, between the twin exterior shear walls, are damaged. However, these walls are not considered as structural elements.

Cracks are found around the main stairs. This typical failure is described under the "General Observations" above.

Investigation and survey of the damages are required. The investigation report shall show the cracks in the walls and in the concrete structures. The concrete and brick walls shall be clearly identified including the height of the low partition walls.

Laboratory test are required, to determine the strength of the exterior shear walls and the interior partition walls.

FIRST OF MAY MEDICAL UNIT, SOCIAL SECURITY HOSPITAL

The building is approx. six story high.

MICHAEL L. BALTAY

There are minor cracks in a few columns at the lowest story. Medium cracks are found in some concrete walls at the lowest story, mainly at the perimeter of the building.

An exterior brick wall is damaged in the bottom four story.

The separation joints are not wide enough. Some of them are filled with mortar.

The damages are concentrated in the bottom story.

P R O P O S E D E N G I N E E R I N G S E R V I C E S

I am interested in providing assistance in the structural redesign of the damaged structures as well as reviewing the structures of new constructions. Due to my other commitments I will not be able to spend considerable time in San Salvador.

For an efficient work, a local engineering team shall be organized. The responsibility of this team will be the survey of the structural damages, preparation of the detailed structural calculations and the contract documents (drawings and specifications) for the repair-work and supervision of the construction as well as the coordination of the design problems and discrepancies during construction. Since the Ministry of Health does not have the necessary manpower, local engineering firms shall be considered.

I propose to provide the following structural engineering services:

- Preparation of a computer model of the structure, based on the "as built" condition.
- Computer calculation of the response of the structural elements for the lateral forces.
- Evaluation of the performance of the structures for lateral forces.
- Recommendation for the areas to be repaired.
- Preparation of a revised computer model, based on the recommended modified elements.
- Calculation of the response of the structural elements for the lateral forces by computer, using the revised model.

My work shall not include the detailed design of the individual elements nor the preparation of the contract documents (drawings and specifications). The computed forces in the structural elements shall provide enough information for detailed design by the local team. By limiting my work, as described above, my

MICHAEL L. BALTAY

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share of the work shall be reduced to approx. 10% to 20% of the total design effort. Furthermore, I recommend to conduct the correspondence in English for cost reduction. I plan to make the computer calculations in metric units.

The design fee depends on the complexity of the design and a few days are required, after receiving the structural information, to evaluate the extent of the work. After the evaluation, I'll submit a proposal to you.

Please send all correspondence to the address shown on the letterhead. The Federal Express does not provide for express delivery, therefore please use the Rapidito TACA.

The best way to call me is after 4 p.m. El Salvador time at 818-768-1249. You may call my answering service at any time, 213-875-2483, and I'll return your call as soon as possible.

I N F O R M A T I O N R E Q U I R E D

The following data are required:

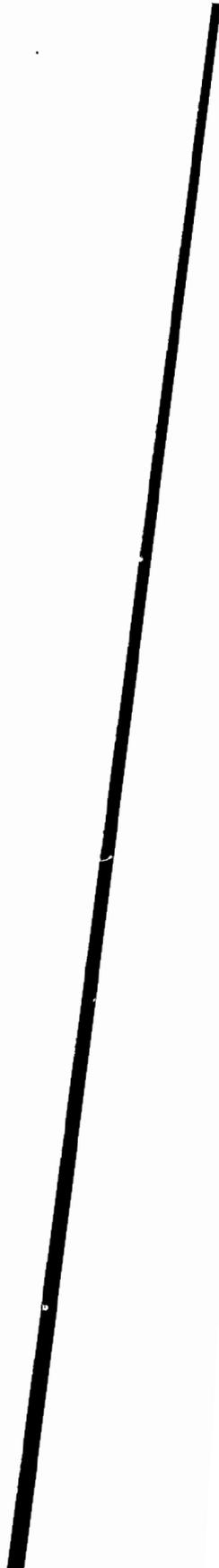
- The Emergency Seismic Regulation in Spanish and in English translation.
- Complete structural drawings and additional architectural drawings showing the brick walls.
- "As-built" drawings, showing the existing conditions and the discrepancy between the drawings and the actual conditions.
- Laboratory test for determining the strength of the structural shear walls and the partitions.
- Survey of the damage caused by the earthquake. The ceilings shall be opened and the concrete beams and columns be checked. The location and the magnitude of the cracks and damages shall be shown on the drawings with a few photographs of the critical areas.
- The lateral forces used for the original design, which may be obtained from the structural calculations.
- Location of separation joints and the thickness of the gap. The conditions of the gaps: filled or open. Are the fillings rigid or flexible?
- Is there any basement below the exterior grade? The height of the earth is needed, if the exterior wall is acting as a retaining wall.

MICHAEL L. BALTAY

- Seismic response spectra and the characteristic period of vibration of the soil (Ts). Dr. V. Bertero, University of California at Berkeley, might have some information, but he stated that he had no authority to release any information.
- Shear walls and partition walls:
 - * Location of the walls
 - * Indicate if the walls are not of full-height and the height in latter case.
 - * Differentiate between concrete and brick walls.
- Connection between the half-height walls and columns, size of dowels between columns and beams. Gap size? Filled with mastic?
- Letter addressed to the Consulate in Los Angeles (and a copy to me) requesting a visa to El Salvador for me and my associates.

.....
MICHAEL L. BALTAY

APPENDIX 3



**INFORME DE VIAJE
SAN SALVADOR**

**Terremoto del 10 de octubre de 1986
Comentarios Informe Consultores STC/OPS, contratados por el Banco**

**Dr. Humberto de Moraes Novaes
Asesor Regional en Administración de Hospitales
y Sistemas de Salud**

27 de octubre - 5 noviembre 1986

*** * * ***

**Organización Panamericana de la Salud
Washington, D.C.**

PAHO/WHO INTEROFFICE MEMORANDUM

Date: 6 noviembre 1986

From: José María Paganini, CP, HSD

To: Dr. Raúl Paredes López

Our Ref: HSD/R3/El Salvador

Attention:

Your Ref:

Subject: Informe visita El Salvador, 27 oct. al
5 noviembre 1986. Terremoto del 10 oct.
1986. Comentarios Informe Consultores

Originator: Humberto Moraes de Novaes, HSD

~~S/C/OPS, contratados por el Banco (Anexo 1)~~

Al concluir nuestro informe de consultoría a Honduras (Proyecto BID San Pedro Sula y otros - Vide HSM - Informe de Visita del 23 abril 1986, recomendabamos la fundamental importancia de que estos proyectos sean acompañados en su inicio, por un único Consultor de la Oficina Central, no sólo como punto focal permanente del país a nivel de Washington, como para evitar que errores básicos de implantación sean cometidos.

La venida a los países de Consultores a Corto Plazo, desacompañados de un Consultor de la OPS, genera recomendaciones al BID y al país, que pueden ser de interés inmediato del propio Banco o del Gobierno, por razones financieras o políticas, pero que no corresponden a un más detenido análisis técnico.

En el inicio de la década del 80, el país a través del préstamo 604/SF-ES de \$34 millones del Banco, se propuso la construcción de 93 "puestos de salud" de 172 m², 15 "Unidades de Salud", con 478 m² y 8 "Centros de Salud" con 3923 m². Estos últimos son pequeños hospitales con 72 camas.

Después de 5 ó 6 años, están en funcionamiento 55 "puestos", dos "Unidades" y un único "centro", de San Bartolo.

Así, los recursos no utilizados de este préstamo serán apropiados para rehabilitación física y reconstrucción de los servicios de salud destruidos o semi-destruidos por el terremoto del 10 de octubre de 1986, de un valor entre US\$15 -US\$25 millones de dólares.

Durante el período 1979-1984 el país tuvo 7 Ministros y cambios en sus políticas de salud, no teniendo hasta el momento ni una doctrina ni un plan operativo para sus servicios de salud en el Area Metropolitana. En un momento de desastre nacional esta situación se vuelve más dramática, pues la presión de Agencias de financiamiento o de países forzan al Gobierno a tomar decisiones precipitadas, provisionales, pero que ciertamente serán definitivas para los próximos años, debido a las obvias incapacidades del país de reprogramar, en el futuro, las decisiones tomadas hoy día.

.../..

Los gastos del sector social de 1973 hasta 1984 disminuirán en 10% y en consecuencia, en este mismo período, la cuota destinada a los hospitales bajó de 50% a 34% contribuyendo para su deterioro físico y funcional.

Si es verdad que hubo "extensión de cobertura" de servicios a través de los "puestos de salud", sus limitaciones físicas (172 m²); sus limitaciones médicas (2-4 horas/médico/día); sus crónicas deficiencias de materiales, conllevan la población a seguir utilizando los ambulatorios y emergencias hospitalarias como primer nivel de atención primaria. Los servicios son prácticamente gratuitos, pues los recursos adquiridos a través de los "patronatos" son escasos y su administración poco profesional.

Todas estas distorsiones políticas, económicas y organizacionales se tornan mas evidentes en una situación de desastre, donde los servicios desarticulados en el pasado no pueden articularse en la crisis.

El Area Metropolitana tiene aproximadamente 1,200.00 habitantes "?" y 4,547 camas hospitalarias y el país (1984), 8,512 camas, para una población de 4,724,000 habitantes. La relación de camas/habitante en el Area Metropolitana es de 3.7/1000 habitantes para 1.8 camas/habitante en el país (Cuadro I y II).

CUADRO I

SERVICIOS DE SALUD EN EL AREA METROPOLITANA

	<u>Hospital</u>	<u>C.S.</u>	<u>U.S.</u>	<u>Total</u>
M.S.P. y A.S.	6	1	23	44*
Ministerio Interior (ANTEL)	1			1
Militar	1			1
ISSS	4		5	9
Privados	15			15

* No estan incluidos otros puestos de salud;

C.S. = Hospital de 70 camas

U.S. = Unidad de Salud

M.S.P.A.S. = Ministerio de Salud Pública y Asistencia Social

I.S.S.S. = Instituto Salvadoreño del Seguro Social

CUADRO II

CAMAS HOSPITALARIAS EN EL AREA METROPOLITANA

M.S.P.A.S.	2862 - 6
ANTEL	68 - 1
Militar	377 - 1
ISSS	687 - 4
Privados	543 - 15
	<u>4547</u>

El principal hospital de la capital es el Rosales, ocupando un área central altamente valorizada de 90,000 m², con sus enfermerías, observando la estructura pabellonar de los hospitales del siglo pasado, distribuidas entre sus médicos titulares, tales como, I Enfermería de Mujeres, III Enfermería de Hombres, etc.

La notable estructura metálica (1900) de este hospital representa uno de los raros ejemplos históricos de la arquitectura hospitalaria pero sin ninguna condición de funcionalidad moderna. No sólo por su estructura física, construida para ser provisoria, pero también por hábitos adquiridos en una institución casi centenaria, ahora necesitan de recomendaciones para su rehabilitación en íntima relación con la construcción de un nuevo hospital.

Las medidas paliativas recomendadas (centros de cirugía con recursos de AID; reformas varias, con recursos del BID; etc.) han de ser exclusivamente para atender las necesidades inmediatas y concomitantemente con la implantación de la "piedra inaugural" del futuro hospital. Esto es indispensable para que el provisorio, de 1986, no se perpetúe por mas de un siglo...

El Hospital Benjamín Bloom con 400 camas para pediatría, funcionaba sin ninguna relación con el "Rosales" quiera bajo el punto de vista de compartir servicios de apoyo, quiera por el intercambio profesional entre las dos instituciones. La fatalidad del Desastre podría eventualmente ser motivo para una futura integración física - funcional. Así, también en las inversiones para su rehabilitación debían ser consideradas las posibilidades arriba asignadas.

Otros detalles de los Hospital Rosales, Bloom y Maternidad están ya mencionados en el Anexo I y no nos detendremos a analizarlos.

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*the original
proposed
plan*

El punto más importante de este informe, en oposición a las recomendaciones del Anexo I, son los que se refieren a la construcción de 4 hospitales de 100 camas utilizando los mismos diseños del "Centro de Salud de San Bartolo" y su listado de equipo, como modelos para esos nuevos nosocomios.

La construcción con base en arquitectura de otros hospitales es uno de los más frecuentes errores observados en América Latina. Estos estudios llevan, sin excepción a la realización de reformas futuras para adaptarlas a los equipos y posteriormente nuevas reformas son necesarias para adaptarlas a las necesidades funcionales.

Por otro lado, hospitales de 100 camas son, en cualquier país, antieconómicos y no funcionales en áreas urbanas de gran concentración humana (1,500 hab/km²). El propio hospital San Bartolo (72 camas), durante la emergencia tuvo su capacidad ampliada para 140 camas sin perjudicar sus servicios de apoyo.

*It may be that's all
D = case
specimens
zeta*

but that reveals flexⁿty, which gives CR is very desirable

Los equipos también deben ser recomendados, no en función de un listado pre-establecido, pero en función de las verdaderas necesidades futuras del "centro de salud", como de los objetivos propuestos. En el San Bartolo se observó mesas cirugías eléctricas de ortopedia, sin funcionar, pues sus características son inapropiadas al hospital. Otro aspecto es la adquisición indiscriminada de equipos sin las correspondientes garantías de mantenimiento y repuestos.

Las localizaciones propuestas para estos "centros de salud" son discutibles. El de Magaña, reemplazando la actual unidad sanitaria de San Miguelito está a 1,2 km o 35 minutos del Hospital Rosales. Lo mismo sucede con Minerva (San Jacinto, 30 minutos); Mejicanos (30 minutos) y Zacamil (15 minutos).

Estos hospitales, deberían hacer parte de una reorganización mas comprensiva y racional de los servicios, funcionando en red con Unidades de Salud, como un único sistema indivisible.

Estas Unidades de Salud, punto focal del sistema de atención médica del área urbana de San Salvador, se transformarían en los verdaderos ambulatorios (12 horas de funcionamiento/día) de sus hospitales de referencia, proyectados para poblaciones de 200,000 a 300,000 habitantes, con 250 a 300 camas, en su fase final de construcción.

La implantación de los nuevos hospitales generales, en posiciones estratégicas en el Area Metropolitana, podrían reemplazar con ventajas económicas, sociales y políticas, los Hospitales Rosales, del ISSS (590 camas) y el Bloom.

Otro aspecto de real importancia en un país en guerra de guerrilla, en la falta de un sistema descentralizado de servicios de emergencia, con ambulancias. Así, dos o tres Unidades de Salud deberían ser proyectadas para unidades ambulatorias para casos de pronto socorro, fuera del área de influencia del Hospital Rosales.

Para manejo gerencial hay necesidad inmediata de entrenar médicos en administración hospitalaria y de sistemas de salud. Pese a la crisis organizacional de sus servicios de salud, la relación de becas para administradores hospitalarios en los últimos años fue 10 veces menor que para el área de Materno Infantil o Planificación Familiar. Paralelamente a cursos cortos (de bajo rendimiento estudiantil y poco impacto en los servicios) deberán preverse 10-20 becas anuales para cursos largos, de 18 meses de duración, en administración de hospitales, así como programas de larga duración de educación continuada.

Para finalizar nos gustaría enfatizar en este Informe que apesar de la necesidad de toma de decisiones urgentes, éstas no contribuyan para tornar más caótico el cuadro de la atención hospitalaria pública de San Salvador en los próximos 10 años.

R E C O M E N D A C I O N E S

1. La relación cama/habitante entre la capital y el resto del país son nitidamente distintas. En un período que el Gobierno ya decidió por la "descentralización" sería indispensable programar la construcción de hospitales fuera del Area Metropolitana con la finalidad de reorientar la demanda de casos a San Salvador. Direcciones de Apopa y Zacatecoluca y otras deberían ser consideradas.
2. El Hospital Rosales debe recibir las reparaciones necesarias para su funcionamiento regular. Concomitantemente deberán ser iniciados de inmediato los estudios para construcción de un Hospital General para reemplazarlo lo más breve posible. Este nuevo hospital, deberá asumir el papel del principal centro médico del país, con todos los recursos tecnológicos actualmente disponibles.
3. El Hospital Bloom "provisorio" debería ser instalado lo más próximo posible del área del Hospital Rosales para compartir sus servicios de farmacia, nutrición, lavandería, suministros, mantenimiento, centro quirúrgico y Esterilización de Materiales, registros médicos. También la proximidad física facilitaría la utilización de profesionales especializados en endoscopia, radiología, etc. En el futuro se consideraría la construcción de enfermerías pediátricas definitivas junto a los nuevos hospitales con la finalidad de seguir compartiendo determinados servicios de apoyo.
4. Rehabilitación o reconstrucción de las Unidades de Salud damnificadas durante el terremoto. Estas unidades, al reabrirse al público, deberían adoptar un horario de funcionamiento extensivo, ofreciendo atención médica integral, tipo "ambulatorio", con la finalidad de desconcentrar la atención de los hospitales.

Dos o tres de estas Unidades podrían ser adaptadas para "Pronto Socorro" ofreciendo atención ambulatoria de emergencia; por 24 horas consecutivas, con servicio de transporte a hospitales para casos de internación o de mayor complejidad.

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Las "Unidades de Salud" del Area Metropolitana deberían ser incorporadas progresivamente, como parte integrante de los nuevos hospitales. Estos modelos comprensivos son universalmente aceptados como las únicas formas organizacionales que mejoran las condiciones de salud de una determinada área de captación o jurisdicción.

Así, las autoridades nacionales, en función de las concentraciones demográficas de 25,000 habitantes (+ 5,000 hab.), indicarían las Unidades de Salud de 12 horas y de 24 horas de funcionamiento diario. A partir de estas definiciones se estudiaría la localización de los nuevos hospitales de referencia para 10-20 Unidades de Salud.

5. Para tonarse viable la financiación operativa de los módulos "hospital-unidad de salud" el sistema de los "patronatos" deberá ser revisado, para el desarrollo de un mejor mecanismo de contribuciones para los servicios ofrecidos.

6. Los cuatro hospitales propuestos para construcción deberían ser proyectados para 250-300 camas con posibilidad de expansión futura. La principal característica arquitectónica debe ser la flexibilidad, para poder iniciar su funcionamiento con 100 camas, lo más pronto posible.

7. Cada uno de los cuatro hospitales deberá tener características distintas, pues tendrá funciones distintas debido a especialidades médicas, tipos de cirugía realizadas, o tipo de patología recibidas, etc. De esta manera el listado de equipos deberá ser en función de estas definiciones.

8. Constitución de una "fuerza tarea" con administradores hospitalarios, arquitectos, enfermeras, nutricionistas, asistentes sociales, médicos generales y especialistas, ingeniería de mantenimiento del MSPAS (con participación también de un equipo del ISSS) acompañado por consultores de la OPS para en 30 días definir:

- i Localización de los 4 hospitales y unidades de salud (estudio demográfico).
- ii Decisión funcional de las actividades desarrolladas por cada uno de estos hospitales.
- iii Diseños preliminares para atender la funcionalidad.
- iv Rediseño de las unidades de salud rehabilitadas para asumir las funciones de "ambulatorios" descentralizados hospitalarios.
- v Propuesta preliminar de costos de inversión.

9. Inmediatamente después de la aprobación del anteproyecto se iniciará la segunda fase con:

- i Licitación para proyectos arquitectónicos y de ingeniería.
- ii Licitación para construcción.
- iii Licitación para supervisión de las construcciones y elaboración de todos los manuales operativos, normas y procedimientos, para el funcionamiento del "complejo Hospital - Unidades de Salud".

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iv Inicio del programa de desarrollo de recursos humanos en el país y en el exterior a través de becas en administración de hospitales y educación continuada.

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ANEXO 1

INFORME DEL SUBSECTOR SALUD MINISTERIO

Estudio de los establecimientos de Salud del Ministerio después del Terremoto del 10 de octubre de 1986 y sugerencias para el período de rehabilitación es que se describe a continuación:

1. Hospitales de tercer nivel de atención.

Los tres hospitales de la capital que proporcionan atención de salud de este nivel de acuerdo a su especialidad fueron fuertemente dañados a consecuencia del sismo (Anexo No. 1), éstos son:

- Hospital Rosales de atención médico quirúrgico
- Hospital Benjamín Bloom de atención pediátrica
- Hospital de Maternidad de atención gineco-obstétrica

A continuación describimos los daños y posibles soluciones de cada uno de ellos:

1.1 Hospital Rosales. Comenzó su construcción en el año 1892 y fue terminado en 1901 por una empresa belga, con carácter provisional, con una construcción tipo francés pabellonal, sus pabellones se encuentran esparcidos en un área de 90.000 m², con estructuras y paredes metálicas a las cuales en el correr de los 85 años de funcionamiento se han hecho una serie de agregados de concreto armado, lo que lo ha hecho más antifuncional, este hospital su capacidad antes del terremoto era de 800 camas, con una ocupación de 100% y con un promedio de estancia de 19 días (12 días medicina y 26 días cirugía). Se atiende sólo pacientes adultos de las especialidades médico-quirúrgicas de segundo y tercer nivel de atención.

Las adiciones de pabellones de concreto es la parte que más sufrió el impacto del terremoto. Los daños sufridos han sido clasificados en 4 grupos a saber: (Anexo No. 2).

1.1.1 Daños Ligeros. Ocurridos en pabellones que pueden ser habitados mientras su reparación, en este grupo se encuentran los siguientes:

- (a) 22 Pabellones de hospitalización de 30 camas cada uno que hacen un total de 660 - actualmente se encuentran usando solo 6 debido al pánico.
- (b) 5/6 partes de la consulta externa
- (c) Pabellón de Emergencias
- (d) Pabellón de Banco de Sangre

- (e) Pabellón de Medicina Nuclear
- (f) Pabellón de Clínica Patológica
- (g) 3 Pabellones que comprende el Servicio de Radiología
- (h) El Pabellón de Pensionado
- (i) Edificio de Dormitorio de Médicos
- (j) Pabellón Administrativo
- (k) La Lavandería
- (l) Pabellón de Almacenes
- (m) La Capilla

1.1.2 Daños Moderados. En los pabellones afectados por este grado de daños no se debe habitar hasta después de la reparación, dentro de éstos se encuentran los siguientes:

- (a) 1/6 de la Consulta Externa
- (b) 2 Pabellones de Hospitalización
- (c) El Comedor de Personal
- (d) Los Quirófanos

1.1.3 Daños Fuertes. En el que los edificios que tiene este tipo de daños requiere de un estudio que determine si es posible reparar o de lo contrario habrá que demoler en este grupo se encuentran:

- (a) La Biblioteca
- (b) El Auditorium
- (c) Fábrica de Sueros
- (d) 1/4 del Pabellón de Cardiología

1.1.4 Daños Severos. Los edificios que tienen daños de este grado deben ser demolidos, en esta escala de daños se encuentran los siguientes edificios:

- (a) Sala de Hospitalización de Cirugía de Mujeres
- (b) La mitad del pabellón de estomatología y cirugía Maxilo facial

- (c) La consulta externa de dermatología
- (d) La parte agregada al pabellón del servicio de Otorrinolaringología hombres.
- (e) La cocina
- (f) Los Talleres de mantenimiento
- (g) Una galera (pabellón)
- (h) El edificio de la casa de médicos residentes
- (i) El edificio de la escuela de enfermería
- (j) Departamento Patología y morge.

A estos caños de la infraestructura hay que sumar los sufridos en las redes del sistema de: agua potable, vapor y energía eléctrica.

1.1.5 Conclusión.

En el período de rehabilitación inmediata se recomienda la reparación de los edificios que han sufrido daños ligeros; dentro de los edificios que han sufrido moderados, debe rehabilitarse los Quirófonos; en el grupo de los edificios que han sufrido daños severos, construir con material prepabricado en tipo campaña la cocina y la reparación de las redes de agua, vapor y energía eléctrica ya que en este mismo período se construirán cuatro Centros de Salud (de 100 camas) en los que se considerarán un 50% de camas médico quirúrgicas, con lo que se recuperan 200 camas.

En el período de reconstrucción se había un hospital Médico Quirúrgico cuya capacidad deberá ser establecida de acuerdo a los resultados del estudio de factibilidad que se haga.

1.2 Hospital Pediátrico Benjamín Bloom.

De construcción de concreto armado, terminado en el año con una capacidad de 400 camas, compuesto de una construcción horizontal donde funcionaba la consulta externa y servicios de ayuda diagnóstica, block que se destruyó totalmente y una torre de 10 pisos en donde se encontraban ubicadas las salas de hospitalización y los servicios de apoyo, ha sido totalmente evacuadas, aparentemente esta torre no ha sufrido daños estructurales, se han hecho estudios superficiales, se requeriría de estudios más profundos por especialistas.

Los pacientes evacuados han sido alojados en 20 carpas y en un tramo del Colegio Tercer Cielo de Educación Básica General "Francisco Menéndez", local que debe ser devuelto en el mes de febrero, con una capacidad de 40 camas.

La consulta externa se está dando en una casa particular prestada. Las autoridades de Salud tienen la intención de, en el período inmediato de rehabilitación, construir en forma provisional un barracón que pueda albergar unos 100 niños, con un pequeño laboratorio y salas de operaciones, rayos X y cocina para luego en el período de reconstrucción, construir un nuevo hospital de 300 camas.

Se aconseja que dicho Barracón se ubique en parte del terreno del Hospital Rosales, para que se usen los servicios generales, salas de operaciones y servicios de ayuda diagnóstica que se van a reconstruir en el Rosales, y comience a convivir el personal médico de ambos hospitales.

El Hospital Bloom proporcionaba un promedio diario de 1.096 consultas externas, la ocupación se dice que es el 100% con un promedio de estancia de 10 días.

El Director del Hospital Dr. Antonio Villatoro Valle nos manifestó de una experiencia realizada, acortando el promedio de estancia a 5 días que dió magnífico resultado.

1.2.1 Conclusión.

En el período de rehabilitación inmediata, para compensar las pérdidas de camas se harán unas galerías, con capacidad para alojar 100 pacientes; en los cuatro centros de salud (de 100 camas) se considera un 25% de camas pediátricas, con lo que se recuperarían 100 camas más.

En el período de reconstrucción se haría un Hospital Pediátrico cuya capacidad deberá ser establecida según los resultados del estudio de factibilidad.

- 1.3 Hospital de Maternidad. De construcción de concreto armado con una antigüedad de 30 años, tiene una capacidad de 350 camas, las cuales tienen un 100% de ocupación, solo ha sufrido daños moderados en el ala situada al oriente del hospital, por rajaduras de las 3 columnas delanteras a nivel del semisótano, lo que repercutió en el primer y segundo piso (Anexo No. 3).

Los ambientes afectados han sido:

-Semisótano - el área de lavandería

-Primer Piso - las salas de expulsión

-Segundo Piso - sala de hospitalización con 20 camas, como medida inmediata se ha apuntalado las vigas al nivel del semisótano.

Este hospital sigue trabajando casi normalmente.

La producción del Hospital de Maternidad antes del terremoto era de:

19.911 partos año o sea un promedio de 54.55 partos por día con un promedio de estancia de 3 días y una ocupación del 50%,

1.3.1 Conclusión. Reparación de las columnas, vigas, paredes, pisos, cielo-razos afectados así como el sistema eléctrico e hidráulico.

2. Centros de Salud. (100 camas).

Basados en la política de salud que sigue el ministerio respectivo, de llevar la atención de salud hacia la comunidad, mediante la descentralización de los establecimientos de salud, y con el objeto de reponer las camas perdidas por el sismo del 10 de octubre de 1986 en el Hospital Médico-Quirúrgico Rosales (400), en el Hospital Pediátrico Benjamín Bloom (400), en el período de rehabilitación el Ministerio de Salud ha planeado la construcción de cuatro Centros de Salud de 100 camas cada uno, para prestar atención del primer y segundo nivel en la consulta externa y de segundo nivel en hospitalización.

En estos Centros de Salud un 50% de las camas se destinarán a la atención médico-quirúrgica, el 25% de camas serían pediátricas y el otro 25% se destinarían a la atención de pacientes de gineobstetricia con lo cual se descongestionaría el Hospital de Maternidad que tiene mas del 100% de ocupación.

2.1 Ubicación.

Estos centros de salud (100 camas) se ubicarían en las colonias más densamente pobladas y de bajos ingresos (Anexo No. 4) como Colonias Magaña, Minerva, Mejicanos y Zacamil.

-Diseño.

En vista de la premura del tiempo en construir estos centros de salud y habiéndose construido unos similares (de 72 camas) en el Préstamo BID 604/SF-ES los que tienen sus planos completos desarrollados (Anexo No. 5a) aprobados por el BID. Los que han sido examinados y para una mejor decisión se visitó uno de ellos en la ciudad de Metapán para observar su funcionalidad, concluyendo que se puede utilizar este diseño como medida de emergencia, agregándole un pabellón que aloja la diferencia de camas (28) para llegar a las 100 camas, cosa que se estudió superficialmente y se vio que es factible.

Lamentablemente estos centros de salud llevados a 100 camas no pueden crecer más en un futuro por la limitación de los terrenos urbanos y porque el proyecto arquitectónico, con que se cuenta no fue concebido para un crecimiento mayor. Un reestudio o nuevo estudio de este proyecto demandaría un tiempo adicional inconveniente

para las circunstancias actuales. Se recomienda la revisión de los planos estructurales para que estén de acuerdo con las normas mínimas a que deben sujetarse la construcción y reparación de Edificios del Reglamento de Diseño Sísmico (Anexo No. 5).

-Equipo.

Otras de las razones que nos inclinan a aceptar el diseño es que se cuenta con la lista completa de equipamiento y sus especificaciones técnicas (Anexos Nos. 6 y 7) a dicha lista de equipamiento habría que adicionar el equipo necesario para cuartos de hospitalización, ya que el resto de equipo para los otros servicios es suficiente para la atención de 100 camas.

Lista de equipo que también tuvo la aprobación del BID lo que contribuiría a reducir el tiempo de iniciación de las obras.

-Conclusión.

Los centros de salud con 100 camas deberán ser construídos en base a los diseños y equipamiento de los construídos en el préstamo BID 604/SF-ES, ampliados a 100 camas.

3. Unidad de Salud.

Se efectuaron visitas a las Unidades de Salud que las autoridades del Ministerio consideraron de interés, (Anexo No. 8), en compañía del Arquitecto Orlando Cruz, Director de Ingeniería del Ministerio, donde pudimos obtener directamente las siguientes informaciones:

3.1 MEJICANOS.

Población de influencia: 65.300 habitantes
Consultas diarias: 160
Médicos: 9 de 2 horas y 1 de 4 horas
Estado de la edificación: Daños en estructuras, mampostería, pisos e instalaciones hidráulicas y sanitarias en un 60%.

3.2 CUSCATANCINGO.

Población de influencia: 33.000 habitantes
Consultas diarias: 98
Médicos: 4 de 2 horas y 1 de 4 horas
Estado de la edificación: No sufrió daños

131

Observaciones: Se trata de una casa alquilada. Recomendable efectuar nueva construcción en la etapa de re-construcción.

3.3 SAN MIGUELITO.

Población de influencia: 95.700 habitantes

Consultas diarias: 156

Médicos: 11 de 2 horas y 1 de 4 horas

Estado de la edificación: Daños en estructuras, mampostería, pisos, techos e instalaciones en general. Hubo hundimiento del terreno. Sus daños son graves y equivalen a un 70%

Observaciones: Recomendable para construcción de un Centro de Salud. Cuenta con lote propio del Ministerio y otro anexo de propiedad del Gobierno. Se encuentra cerca a Concepción, donde podría atenderse su demanda durante el tiempo de construcción y luego podría prescindirse de éste.

3.4 CONCEPCION.

Población de influencia: 17.200 habitantes

Consultas diarias: 169

Médicos: 12 de 2 horas y 1 de 4 horas

Estado de la edificación: Daños menores pero su edificio es obsoleto e inadecuado.

Observaciones: Aunque la población estable es poca, atiende bastante población flotante de la zona comercial. Prestaría servicio durante la construcción del Centro de Salud de San Miguelito que se encuentra cerca, luego debería dejar de funcionar. Se encuentra en una casa alquilada.

3.5 SAN JACINTO.

Población de influencia: 35.000 habitantes

Consulta diarias: 180

Médicos: 13 de 2 horas y 1 de 4 horas

Estado de la edificación: Destrozos generales. No es rehabitable. Daños en un 80%.

Observaciones: Recomendable para construcción de un Centro de Salud.

3.6 BARRIOS.

Población de influencia: 73.000 habitantes
Consultas diarias: 155
Médicos: 7 de 2 horas y 3 de 4 horas
Estado de la edificación: Sufrió unos pocos daños superficiales.

3.7 SAN ANTONIO ABAD.

Población de influencia: 43.900 habitantes
Consultas diarias: 91
Médicos: 5 de 2 horas y 1 de 4 horas
Estado de la edificación: Daño en la placa exterior de la pérgola de entrada. Buen estado.

3.8 MONSERRAT.

Población de influencia: 79.000 habitantes
Consultas diarias: 65
Médicos: 3 de 2 horas y 2 de 4 horas
Estado de la edificación: Daños menores, pero tiene problema anterior de impermeabilización de la cubierta.
Observaciones: Pertenece al Gobierno pero no al Ministerio de Salud. Es muy pequeño e incómodo. Por su ubicación, es recomendable para ubicar uno de los nuevos Centros de Salud.

3.9 SANTA LUCIA.

Población de influencia: 25.700 habitantes
Consultas diarias: 39
Médicos: 3 de 2 horas y 1 de 4 horas
Estado de la edificación: No sufrió daños

Observaciones: Se trata de una casa alquilada, muy pequeña. Cuenta con un terreno cuya adquisición está formalizando el Ministerio. Recomendable construir una nueva en la etapa de construcción.

3.10 GUADALUPE O SOYAPANGO.

Población de influencia: 100.000 habitantes
Consultas diarias: 126
Médicos: 7 de 2 horas y 1 de 4 horas
Estado de la edificación: Dos vigas agrietadas y hundimiento del terreno con inclinación breve de un sector.

3.11 AMATEPEC.

Población de influencia: 21.400 habitantes
Consultas diarias: 80
Médicos: 2 de 2 horas y 2 de 4 horas
Estado de la edificación: Averiada la placa exterior de la pérgola de entrada. Buen estado, se trata de un edificio nuevo.

3.12 CIUDAD DELGADO.

Población de influencia: 41.000 habitantes
Consultas diarias: 130
Médicos: 7 de 2 horas y 2 de 4 horas
Estado de la construcción: Un tramo, donde funciona Odontología sufrió daño grave, por hundimiento del terreno se inclinó y partió su estructura. Además daños menores en pisos, muros e instalaciones hidráulicas y sanitarias. Daños en un 70%.

Observaciones: Debe demolerse y construirse una Unidad nueva en la primera etapa de rehabilitación.

3.13 ZACAMIL.

Estado del edificio: No sufrió daños

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Observaciones: Por su ubicación y por la posibilidad de contar con terreno adecuado, ha sido seleccionada para la ubicación de uno de los Centros de Salud que se construirían.

3.14 LOURDES.

Estado del edificio: No sufrió daños en su edificación pero si en un puente de acceso, lo que la ha dejado fuera de servicio.

Observaciones: Funciona en casa alquilada, por lo que se recomienda construir una Unidad propia en la etapa de reconstrucción.

3.15 CONCLUSIONES.

- (a) En la etapa de rehabilitación se construiría una Unidad de Salud por destrucción de su instalación actual (Ciudad Delgado). Se construiría con los planos existentes, aprobados por el BID, que fueron utilizados en el préstamo 604/SF-ES, como medida de emergencia ya que se encuentran completamente desarrollados, lo que ahorraría la necesidad de utilizar tiempo adicional. Los planos estructurales deben estar de acuerdo con las normas a que deben sujetarse las construcciones y reparaciones de Edificios del Reglamento de Diseño Sísmico y las demás que se adopten. Para la dotación se utilizaría el listado de equipo con que se cuenta igualmente.
- (b) Se hace necesario efectuar obras de reparación de diferente grado en cinco Unidades de Salud: (Barrios. San Antonio Abad, Mejicanos, Soyapango, Amatepec).
- (c) Cuatro unidades de Salud se incorporarían a los cuatro Centros de Salud que serían construídos. (Monserrat-San Miguelito-San Jacinto-Zacamil).
- (d) Por encontrarse una Unidad de Salud en una casa inadecuada y por su cercanía a uno de los Centros de Salud que se recomienda construir, se prescindiría de ella y se involucraría a éste nuevo centro. (Concepción).
- (e) Sería conveniente en un futuro, trasladar a nuevas edificaciones adecuadas, de propiedad del ministerio de Salud, tres Unidades que hoy funcionan en casas alquiladas que no ameritan efectuar inversión en ellas. (Cuscatancingo-Santa Lucía-Lourdes).
- (f) Diseño. Por ser necesario la construcción de las unidades de salud en el plazo mas corto y existiendo los diseños de una Unidad de Salud Tipo completamente desarrollado y aprobados por el BID en el préstamo 604/SF-ES, los que han sido examinados y pueden ser utilizados. (Anexo No. 9).

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(g) Equipo. Igualmente existe una lista de equipamiento para las unidades de salud aprobado por el BID en el mismo préstamo que será utilizado.

DR. ANTONIO GARCIA ERAZO
Asesor Administración Hospitales

ARQ. ALVARO ARCHILA
Asesor-Arquitectura Hospitalaria

APPENDIX 4

**INFORME DE VIAJE
EL SALVADOR**

17 - 26 noviembre 1986

**Dr. Humberto de Moraes Novaes
Consultor OPS/OMS**

INDICE

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ANEXO I: Núcleo Técnico Asesor

ANEXO II: Recuperación de la Capacidad Instalada

La Dirección de Planificación del Ministerio de Salud coordinará los trabajos respectivos con el propósito de continuar la formulación de los proyectos que se requieren en la reconstrucción del Sistema de Servicios de Salud de la Región Metropolitana. Para estos objetivos se designará un grupo de funcionarios del MSPAS y otras Instituciones del Sector, que con la colaboración de la OPS y otras Agencias Internacionales formarán un "Núcleo Técnico Asesor" para elaborar el "Programa Metropolitano de Salud" (P.M.S.) de San Salvador.

1. Objetivos para el Trabajo del Núcleo

1.1 Generales:

- 1.1.1 Preparar los anteproyectos funcionales, arquitectónicos y gerenciales así como requerimientos de recursos humanos, físicos y financieros que requiera el PMS.
- 1.1.2 Colaborar en la supervisión del desarrollo del Plan de Reconstrucción hasta su implementación total.

1.2 Específicos:

- 1.2.1 De planificación. Desarrollo análisis funcionales, programas espaciales, cronograma, cuadro preliminar de personal, modelos gerenciales, proyecciones demográficas, epidemiológicas, etc.
- 1.2.2 Reconstrucción y análisis. Desarrollar diseños preliminares o diagramas de masas; identificar equipos institucionales apropiados; acompañar la localización de terrenos, etc.

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mv

1.2.3 De financiación y costos. Proponer modelo contable, presupuesto, estudios de costos/beneficios, costo/impacto, productividad, etc.

1.2.4 De administración. Establecer el manejo del proyecto y su seguimiento y preparación de propuestas para agencias de financiación.

1.3 Integrantes del Núcleo Asesor:

El grupo estará formado por profesionales de distintas disciplinas, entre ellos administradores, arquitectos, médicos en sus distintas especialidades, planificadores, educadores, ingenieros, sociólogos, dibujantes, personal de secretaría y apoyo y otros según se requieran.

Observación - Ver anexo I

1.4 Localización:

El Núcleo Técnico Asesor utilizará un local específico en el MSPAS para integrar sus diversas actividades.

1.5 Descripción de funciones del Núcleo.

1.5.1 Actividades generales de: investigación, análisis y decisión, estudios preliminares, coordinación y supervisión del proyecto.

1.5.2 Actividades específicas: Para facilitar las tareas, el Grupo podrá subdividirse en subgrupos de manera de realizar temporalmente tareas específicas, como:

- a) Revisar políticas de salud y de desarrollo.
- b) Recolección y análisis de la información demográfica, epidemiológica y socioeconómica.
- c) Definición del sistema y programación funcional, logística y suministros y equipos.
- d) Número y tipo de unidades requeridas y su elaboración física.
- e) Programación y diseño arquitectónico.
- * f) Estudios de factibilidad económica.

1.6 Desarrollo del Programa:

- a) Revisión de áreas prioritarias.
- b) Actualización de datos demográficos, epidemiológicos y socio-económicos.
- c) Proyección de estos datos para los años de implementación del proyecto.
- d) Definir el estado actual de salud y sus necesidades sentidas o no. Demanda versus utilización de cada área.
- e) Mapeamiento y análisis de la estructura física y funcional actual (servicios de salud públicos y privados).

Observación: Ver Anexo II

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f) Proyección de necesidades preliminares de servicios de salud para el año meta:

- Tipo de instalación: localización x modelo.
- Tipo de recursos humanos: selección de personal y entrenamiento.
- Tipo de equipos: por categoría de servicio.
- Tipo de recursos financieros: costo de capital y operacional por unidades y centros de salud.

g) Definir programación funcional entre las unidades periféricas y los hospitales (centros de salud):

- Manejo del Modelo.
- Referencia y contrareferencia de enfermos, familiares y personal.
- Relación interprofesional en las unidades y centros de salud.
- Funcionamiento de registro médico, admisión de enfermos y referencias.

- Funcionamiento de farmacia y distribución de medicamentos.
 - Funcionamiento de servicios de nutrición.
 - Funcionamiento de servicios de enfermería.
 - Funcionamiento de servicios de asistencia social.
 - Funcionamiento de servicios de radiología.
 - Funcionamiento de servicios de laboratorio.
 - Funcionamiento de servicios administrativos (contabilidad, compras, presupuesto, personal, etc.)
 - Funcionamiento de servicios de material de consumo suministros.
 - Funcionamiento de servicios de mantenimiento preventivo y correctivo de los servicios generales.
 - Funcionamiento de servicios de lavandería y costura.
- i) Definir programas espaciales y de situación por cada establecimiento:
- Listado de categoría de consultorios.
 - Listado de categoría de áreas técnicas (laboratorio, farmacia, enfermería, nutrición, quirófanos, etc.)

- Listado de especificaciones de cada sala.
- Listado de equipos y muebles para cada unidad.
- j) Compatibilización de la programación funcional con la programación arquitectónica.
- k) Preparar términos de referencias para firmas de arquitectura especializada, para diseño preliminar de los proyectos.
- l) Preparar términos de referencia para construcción de los diseños seleccionados.
- m) Preparar términos de referencia para firma de consultoría de supervisión gerencial y preparación de manuales de operación y procedimientos para actividades administrativas y técnicas, así como para el funcionamiento armónico del modelo integral de salud.
- n) Determinar necesidades de acuerdos legales o convenios inter-institucionales para implementación del proyecto y prepararlos según sea necesario.
- * o) Preparar las estimaciones de costo de capital y operación.
- p) Preparar los documentos necesarios para licitación, arquitectura, construcción, supervisión y operación.
- q) Indicar el papel del proyecto en relación al impacto social del mismo. Identificar necesidades que no serán atendidas por el proyecto. Cuantificar metas.

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2. Hospital Rosales.

Con apoyo de la AID el Hospital Rosales sigue en fase de rehabilitación para retornar sus actividades normales. Su futuro destino todavía no fue determinado en definitivo.

3. Hospital Infantil Bloom

La OPS aguarda informe del STC Ing. Michael Baltay sobre la situación de la estructura de concreto armado. Propuesta de análisis laboratorial y de Proyecto de reconstrucción podrá ser financiada por la AID local.

4. Principales contactos fuera del MSPAS realizados:

4.1 Sr. K. Armstrong - AID

4.2 Ing. Alberto Paredes - BID

ANEXO I

NUCLEO TECNICO ASESOR

ASESORES OPS

Washington - Dr. Humberto de Moraes Novaes

Washington - Sr. Boris Ibañez

OPS/SAN - Ing. Victor Pou

Ing. Walter Armorin Ressora

STC - Dr. Luis Cervantes
- Dr. Hector Capellini
- Arq. Eduardo Leite-Ribeiro

ASESORES MSPAS

Coordinador:

Economista: Regina Guzmán de Molina

Ingeniería y Arquitectura:

Arquitecto: Orlando Cruz

Arquitecto: Misalia Quiñonez

Arquitecto: Carmen Elena Cortéz

Ingeniero: Lisandro Cortés Valiente

Arquitecto: Héctor Tulio Paredes

Programación

Médico: Celia Osorio de Salazar

Enfermera: María de la Paz de Sanabria

Nédico: Angel Guerra Sandoval

Nédico: Luis Alberto Cañadas

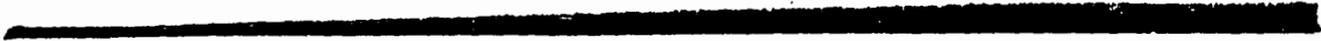
Recursos Humanos y Financieros

Administrador: David Castro

Economista: Elizabeth de Aymitia

Información

Nédico Estad. Dr. Juan Pérez



ANEXO I I

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RECUPERACION DE LA CAPACIDAD INSTALADA

INSTRUCTIVO

El catastro de la capacidad instalada del recurso físico en Salud, se inicia con la denominación y localización del establecimiento existente. Se indicará la fecha de terminación del levantamiento de la información.

RECURSO FISICO: ARQUITECTURA

Unidad Funcional:

Se entiende por unidad funcional el espacio donde se realiza la actividad que define al servicio.

Estado de obsolescencia física:

Estado de obra civil y de las instalaciones.

Se clasificará en Bueno (B), Regular (R) y Malo (M).

Se considerará "Bueno" cuando necesite solamente mantenimiento periódico, "Regular" si necesita reparación menor del 50% y "Malo" cuando requiera más del 50%.

Paralelamente se consignará la situación de cada estado "Bueno", "Regular" y "Malo".

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RECURSO FISICO: EQUIPAMIENTO

Se consignará el equipamiento de la U.F. estableciendo la existencia, la cantidad de unidades, el estado (B, R, M) con el mismo criterio asignado a arquitectura, consignando el número de unidades en esos estados; en casos prefijados se establecerá la capacidad, estableciéndose al pie de la página la unidad de medida, el tipo y las dimensiones de determinado equipamiento.

Se dejará espacio para incorporar aquel equipamiento de complejidad no indicado.

Al pie de nota, línea punteada se dejará un espacio para que se anote el criterio del jefe del servicio sobre aquello que considere más deficiente en su área de trabajo.

NOMBRE DEL ESTABLECIMIENTO: _____

TIPO DE ESTABLECIMIENTO: . . . _____

DIRECCION: _____

LOCALIDAD: _____

DEPARTAMENTO: _____

FECHA DE REALIZACION: _____

DEL ESTABLECIMIENTO (m²): PRIMERA PLANTA _____

SEGUNDA PLANTA _____

AREA TOTAL _____

AREA DE TERRENO: _____

PLANOS Y FOTOS (SI DISPONIBLES) _____

. ATENCION AMBULATORIA
 1.1 Consulta Médica
 1.1 A. Recurso Físico: Arquitectura

CATEGORIA FUNCIONAL: CONSULTORIOS	NUMERO	SUPERFICIE (M2)				OBSERVACIONES
		1	2	3	Total	
Consultorio General						
Consultorio Pediátrico						
Consultorio especializado:						

Consultorio (otros)						
TOTAL						

ESTADO DE OBSOLESCENCIA	B	R	M	OBSERVACIONES
Obras Civiles:				
Pisos				
Revestimientos				
Divisibles				
Puertas y ventanas				
Estructura				
Instalaciones:				
Hidráulica				
Eléctrica				
Otras				

1.1 B Recurso Físico: Equipamiento

MUEBLES Y EQUIPO	EXISTENCIA		CANT. N°	ESTADO			CAPA- CIDAD	OBSERVACIONES
	SI	NO		B	R	M		
- Escritorio								
- Mesa de examen								
- Negatoscopio								
- Lámpara de pie								
- Tensiómetro								
- Estatoscopio								

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ATENCIÓN AMBULATORIA
 1.2 Consulta Odontológica
 1.2.A. Recurso Físico: Arquitectura

AD FUNCIONAL: CONSULTORIOS	NUMERO	SUPERFICIE (M2)				OBSERVACIONES
		1	2	3	Total	
Consultorio Odontológico						
TOTAL						

ADNO DE OBSOLESCENCIA	B	R	M	OBSERVACIONES
Para civil: Autos Vestimientos Divisiones Puertas y ventanas Estructura Instalaciones: Hidráulica Eléctrica Otras				

2 B Recurso Físico: Equipamiento

MUEBLES Y EQUIPO	EXISTENCIA		CANT. N°	ESTADO			CAPACIDAD	OBSERVACIONES
	SI	NO		B	R	M		
Compresor								
Equip Radiog.dent. (1)								
Sillón dental								
Sterilizador (2)								
Borno (3)								
Unidad Dental								

2 autoclave o estufa (elect.o vapor); 3 bajo o alta velocidad

OBSERVACIONES

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1. ATENCION AMBULATORIA

1.3 Curaciones e inyecciones

1.3.A. Recurso Físico: Arquitectura

UNIDAD FUNCIONAL: CONSULTORIOS	NUMERO	SUPERFICIE (M2)				OBSERVACIONES
		1	2	3	Total	
a Tratamiento; Curativo la Tratamiento: Otros						

ESTADO DE OBSOLESCENCIA	B	R	M	OBSERVACIONES
Tra Civil: Pisos Revestimientos Divisiones Puertas y ventanas Estructura Instalaciones: Hidráulica Eléctrica Otras				

1.3 B Recurso Físico: Equipamiento

MUEBLES Y EQUIPO	EXISTENCIA		CANT. N°	ESTADO			CAPACIDAD	OBSERVACIONES
	SI	NO		R	R	M		
Mesa de curaciones Mesa de examen Succionador Lámpara de pie Mesa auxiliar Carro curativo Otros:								

OBSERVACIONES

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1.4 Inmunizaciones

1.4.A. Recurso Físico: Arquitectura

CATEGORÍA FUNCIONAL: SALA DE TRATAMIENTO	NUMERO	SUPERFICIE (M2)				OBSERVACIONES
		1	2	3	Total	
Inmunizaciones						

TIPO DE OBSOLESCENCIA	B	R	M	OBSERVACIONES
Infra Civil: Mobiliarios Vestimentos Instalaciones Puertas y ventanas Estructura Instalaciones: Hidráulica Eléctrica Otras				

B Recurso Físico: Equipamiento

MATERIALES Y EQUIPO	EXISTENCIA		CANT. N°	ESTADO			CAPACIDAD	OBSERVACIONES
	SI	NO		B	R	M		
Esterilizador Refrigerador de examen Estetoscopio Inyectores Jeringas Otros:								*1
								*2

*1 Autoclave o Estufa, *2 piezas

OBSERVACIONES

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1. ATENCION AMBULATORIA

1.5 Atención de Emergencia

1.5.A Recurso Físico: Arquitectura

UNIDAD FUNCIONAL: SALA DE TRATAMIENTO	NUMERO	SUPERFICIE (M2)				OBSERVACIONES
		1	2	3	Total	
Sala Tratamiento: Emergencia Sala Tratamiento: Otros						

ESTADO DE OBSOLESCENCIA	B	R	M	OBSERVACIONES
Obra civil: Pisos Revestimientos				

1. 5 B Recurso Físico: Equipamiento

MUEBLES Y EQUIPO	EXISTENCIA		CANT. Nº	ESTADO			CAPA- CIDAD	OBSERVACIONES
	SI	NO		B	R	M		
Mesa de examen Mesa auxiliar Carro curaciones Lámpara de pie Otros:								

OBSERVACIONES

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OFICINAS TECNICAS

2.A Recurso Físico: Arquitectura

USO FUNCIONAL: OFICINAS	NUMERO	SUPERFICIE (M2)				OBSERVACIONES
		1	2	3	Total	
Primera Visitadora Domiciliar Inspector de Saneamiento Sala de entrevistas Sala de Clase Sala de reuniones Otros:						

ESTADO DE OBSOLESCENCIA	B	R	M	OBSERVACIONES
Ingeniería Civil: Puertas Vestimentas Divisiones Puertas y ventanas Estructura Instalaciones: Hidráulica Eléctrica Otros				

B Recurso Físico: Equipamiento

MUEBLES Y EQUIPO	EXISTENCIA		CAPT. N°	ESTADO			CAPACIDAD	OBSERVACIONES
	SI	NO		B	R	M		
Equipo audiovisual Escritorio Sillas								

OBSERVACIONES

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SERVICIOS AUXILIARES

3.1 Laboratorio

3.1.A Recurso Físico: Arquitectura

FUNCIONAL: LABORATORIO	NUMERO	SUPERFICIE (M2)				OBSERVACIONES
		1	2	3	Total	
Laboratorio de Toma muestras :						

TIPO DE OBSOLESCENCIA	B	R	M	OBSERVACIONES
a civil: s estimiento siones tas y ventanas ructura alaciones: ráulica etrica s				

B Recurso Físico: Equipamiento

MATERIALES Y EQUIPO	EXISTENCIA		CANT. N°	ESTADO			CAPA- CIDAD	OBSERVACIONES
	SI	NO		B	R	M		
microscopio titador trifuga frigerador o maría tufa os:								

OBSERVACIONES

3. SERVICIOS AUXILIARES

3.2.1 Radiodiagnóstico

3.2.1.A Recurso Físico Arquitectura

DAD FUNCIONAL: SALA DE DIAGNOSTICO	NUMERO	SUPERFICIE (M2)				OBSERVACIONES
		1	2	3	Total	
a de radio-diagnóstico						

ESTADO DE OBSOLESCENCIA	B	R	M	OBSERVACIONES
ra Civil: sos vestimientos visiones ertas y ventanas tructura stalaciones: dráulica ectiva ras				

2.1B Recurso Físico: Equipamiento

MUEBLES Y EQUIPO	EXISTENCIA		CANT. N°	ESTADO			CAPA- CIDAD	OBSERVACIONES
	SI	NO		B	R	M		
uipo Radiodiagnóst.*1 ros								

I MA.

OBSERVACIONES

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3. SERVICIOS AUXILIARES

3.2.2 Radiodiagnóstico: Areas complementarias

3.2.2.A Recurso físico: Arquitectura

TIPO DE AREA FUNCIONAL: AREAS COMPLEMENTARIAS	NUMERO	SUPERFICIE (M2)				OBSERVACIONES
		1	2	3	Total	
para clara para oscura os:						

TIPO DE OBSOLESCENCIA	B	R	M	OBSERVACIONES
para Civil: os vestimientos visiones puertas y ventanas estructura instalaciones: hidráulica eléctrica ros				

B Recurso Físico: Equipamiento

MEDIOS Y EQUIPO	EXISTENCIA		CANT. Nº	ESTADO			CAPA- CIDAD	OBSERVACIONES
	SI	NO		B	R	M		
procesador telegatiscopio otros:								

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4. OFICINAS ADMINISTRATIVAS

4.A Recurso físico: Arquitectura

CATEGORÍA FUNCIONAL: OFICINA	NUMERO	SUPERFICIE (M2)			Total	OBSERVACIONES
		1	2	3		
recepción						
secretaría						
sala de reuniones						
registro						
chivo clínico						

ESTADO DE OBSOLESCENCIA	B	R	M	OBSERVACIONES
Plano Civil:				
pisos				
vestimientos				
aberturas				
puertas y ventanas				
estructura				
instalaciones:				
hidráulica				
eléctrica				
otros				

B Recurso Físico: Equipamiento

CATEGORÍA Y EQUIPO	EXISTENCIA		CANT. N°	ESTADO			CAPACIDAD	OBSERVACIONES
	SI	NO		B	R	M		
critérios								
mesas								
sala de reunión								

5. AREAS COMPLEMENTARIAS

5.1 Farmacias y bodegas

5.1.A Recurso Físico Arquitectura

UNIDAD FUNCIONAL: DEPOSITOS	NUMERO	SUPERFICIE (M2)				OBSERVACIONES
		1	2	3	Total	
farmacia						
bodegas						
otros						

ESTADO DE OBSOLESCENCIA	B	R	M	OBSERVACIONES
Obra Civil:				
pisos				
Revestimientos				
divisiones				
puertas y ventanas				
Estructura				
instalaciones:				
hidráulica				
eléctrica				
Otros				

B Recurso Físico: Equipamiento

MUEBLES Y EQUIPO	EXISTENCIA		CANT. N°	ESTADO			CAPACIDAD	OBSERVACIONES
	SI	NO		B	R	M		
Estantes								
Escritorio								
Básculas de pie								
Otros								

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5. REAS COMPLEMENTARIAS

5.1 De uso público

5.1.A Recurso físico arquitectura

AD FUNCIONAL: AREAS COMPLEMENTARIAS	NUMERO	SUPERFICIE (M2)				OBSERVACIONES
		1	2	3	Total	
de espera opción as:						

ESTADO DE OBSOLESCENCIA	B	R	M	OBSERVACIONES
ra civil: sas vestimientos visiones ertas y ventanas tructura stalaciones: dráulica éctrica ros				

1 B Recurso Físico: Equipamiento

ELEMENTOS Y EQUIPO	EXISTENCIA		CANT. Nº	ESTADO			CAPA- CIDAD	OBSERVACIONES
	SI	NO		B	R	M		
las os:								

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5. AREAS COMPLEMENTARIAS

5.2 Recreación

5.2.A Recurso Físico: Arquitectura

CATEGORIA FUNCIONAL:	NUMERO	SUPERFICIE (M2)				OBSERVACION
		1	2	3	Total	
Comedor						
Salones						

ESTADO DE OBSOLESCENCIA	B	R	M	OBSERVACION
Obra Civil:				
Pisos				
Revestimientos				
Particiones				
Puertas y ventanas				
Estructura				
Instalaciones:				
Hidráulica				
Eléctrica				
Otros				

5.2. B Recurso Físico: Equipamiento

MUEBLES Y EQUIPO	EXISTENCIA		CANT. N°	ESTADO			CAPACIDAD	OBSERVACION
	SI	NO		B	R	M		
Mesa para comida								
Sillas								
Refrigeradora								

5. AREAS COMPLEMENTARIAS

5.3 Instalaciones sanitarias

5.3.A Recurso físico: Arquitectura

UNIDAD FEDERAL: AREAS COMPLEMENTARIAS	NÚMERO	ESTADO DE CONSERVACIÓN			TOTAL	OBSERVACIONES
		1	2	3		
Asistentes de personal						
Sanitario público masculino						
Sanitario público femenino						
Sanitario personal						
ESTADO DE CONSERVACIÓN						
Obras Civiles:						
Pisos						
Revestimientos						
Divisiones						
Puertas y ventanas						
Estructura						
Instalaciones						
Hidráulica						
Eléctrica						
Otras						

5.3B Recurso Físico: Equipamiento

MUEBLES Y EQUIPO	EXISTENCIA		CAPACIDAD	ESTADO			CAPACIDAD	OBSERVACIONES
	SI	NO		B	R	M		

INFORMACION GENERAL DEL ESTABLECIMIENTO

Unidad de Salud _____ Municipio _____ Area de _____
Influencia.

Nº de Comunidades _____

1. Asistencia Médica

a- Nº de Horas Médico _____
b- Nº de Recetas Despachadas _____
c- Total de Consultas año _____
d- Nº de Referencias año _____

Observaciones _____

2. Odontología

a- Nº de Horas Odontólogo día _____
b- Total de Consultas año _____
c- Nº Unidades Dentales _____

Observaciones _____

3. Nutrición

a- Nº de Beneficiarios _____

Observaciones _____

4. Registro Médico

Area del

- a- Nº de personas que lo atienden _____
- b- Nº de expedientes por año _____
- c- Nº de expedientes por día _____

Observaciones _____

5. Epidemiología (Vacunación)

- a- Nº de vacunas aplicadas por día _____
- b- Nº de termos (K,S) _____

Observaciones _____

6. Laboratorio

- a- Nº de Microscopistas _____
- b- Total exámenes año
Exámenes día
- Hematología _____
- Heces _____
- Orina _____
- G.G. _____
- Otros _____

Otro Personal

Observaciones _____

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7. Farmacia

- a- Nº de personas que atienden _____
- b- Pagadas por _____
- c- Nº de recetas despachadas día _____
- d- Personal que lo atiende _____

Observaciones _____

8. RX

- a- Nº de placas por día _____

Observaciones _____

9. Otros Programas

- a- Materno — Nº de inspecciones año _____
 - Nº de controles _____
- b- Infantil — Nº de inspecciones _____
 - Nº de controles _____
- c- Planificación Familiar — Total de usuarias _____
 - Nº de Anovulatorios _____
 - Nº de DIU _____
- d- Saneamiento Ambiental — Nº de Inspectores _____
 - Nº de inspecciones por año. _____
 - Nº de realizaciones por año. _____

Control antirrábico - Nº de perros observados año _____

Nº de perros eliminados año _____

Observaciones _____

10. Patronato

a- Ingresos promedio mes _____
b- Egresos promedio mes _____
c- Colectora (salario) _____

Observaciones _____

11. Otras Instituciones

que hacen salud

a- _____
b- _____
c- _____

Responsable de la Información

Lugar: _____

Fecha: _____

/mr.

24/XI/86.

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C U S C A T A N C I N G O

ENCUESTA DE AREA DE INFLUENCIA
Y NUMERO DE POBLACION CUBIERTA

1) Qué colonias cubre la Unidad? Santa Rosa I y II, San Carlos, María Auxiliadora, Santa Margarita, Rpto. Santa Margarita I y II, San Francisco, El Milagro, El Rosario, El Porvenir, Veracruz, Florencia, Primavera, Trinidad, Ana María, Urb. Los Laureles, Urb. San Antonio Abad, Rpto. San Carlos, Rpto. Santa Clara, Los Lirios, Molina, San Pablo, Chaín, Cuscatlán, Trinidad, Santa Ana, Santa Sabina, San Luis, El Tránsito, San Fernando, Juanita, Rpto. Santa Lucia, Ana María.

2) Cuántas personas viven en el Area de Influencia de la Unidad?

18,409

3) Cuántas personas son atendidas diariamente?

65

4) Hay falta de agua potable? No

Hay servicio de alcantarillado? Sí

5) De dónde proviene la demanda?

Col. Primavera, Col. Veracruz, Col. San Luis, Calle Central, Rpto. Trinidad, Col. María Auxiliadora, Col. Santa Margarita.

SAN ANTONIO ABAD

Información proporcionada: Sra. de Aguiñada
Supervisora.

ENCUESTA DE AREA DE INFLUENCIA
Y NUMERO DE POBLACION CUBIERTA

1) Qué colonias cubre la Unidad? Ciudad Satélite, Rpto. Los Rosales, Col. Bernal, Col. Lisboa, Col. Las Rosales, Rpto, 2 de Abril, Residencial Monte Verde, Resi. Zanzíbar, Col. Santa Leonor, Col. San Bartolo, Jardines de Miralvalle, Res. Montefresco, Rpto. Monte Fresco, Res. La Esperanza, Res. Escalón, Urb. Campos Elíscos, Serramonte 1 y 2, Col. Santa Teresa, Res. El Matazano, Res. Pacífico, Col. Rotonda, Urb. Esperanza, Lotificación La Granjita, Col. El Progreso, Col. Santa Rosa, Lotificación Melara, Lotificación El Descanso.

2) Cuántas personas viven en el Area de Influencia de la Unidad?

43,893

3) Cuántas personas son atendidas diariamente?

250

4) Hay falta de agua potable? No

Hay servicio de alcantarillado? Sí

Hay problemas con las aguas lluvias.

5) De dónde proviene la demanda?

Col. Bernal, Col. Miranda, San Ramón, Col. Santa Teresa.

/medm.

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M E J I C A N O S

ENCUESTA DE AREA DE INFLUENCIA
Y NUMERO DE POBLACION CUBIERTA

1) Qué colonias cubre la Unidad? Las Palmas, Independencia, Chávez, San Belarmino, La Fortuna, San Antonio, México, Ibiza, Las Margaritas, San José, Domínguez, Santa Lucía, Morales, Juanita, Jardín I y II, Santa Rosa, España, El Progreso, Monterrey, Buenos Aires I, II, III, San Juan, Iveria, San Simón, Buena Vista, Veracruz, Cantizano, Bethel, Navarrete, La Gloria, Kennedy, Delicias del Norte, Cisneros, España, Dolores, Palmira, Los Alpes, Regalado, Polauco, Urbanización El Conacaste

2) Cuántas personas viven en el Area de Influencia de la Unidad?

65,500

3) Cuántas personas son atendidas diariamente?

De 500 a 550

4) Hay falta de agua potable? No

Hay servicio de alcantarillado? Sí

5) De dónde proviene la demanda?

Av. Montreal.

/medm.

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Z A C A M I L

ENCUESTA DE AREA DE INFLUENCIA
Y NUMERO DE POBLACION CUBIERTA

1) Qué colonias cubre la Unida? Zacamil, San Antonio, El Bambú, Flor Blanca, San Francisco, Col. Yanira, Las Colinas, Res. Santa María, 3 Magnolias, El Roble, La Ascención, Las Brisas del Eden, El Crmen, Bonanza, Buena Vista, Bed Galatea, Los Angeles, Monterrey, Santa Simona, Escandia, San Miguel, Santa Luisa, Santa Cecilia, El Milagro, Marín, Lotif. Cárcamo, La Divina Providencia, El Coco, El Icaco, Col. Belis, Escalante, Reyes, Milagro de Fátima, INPEP, Santa Gertrudis, Lotif. Santa Rita, Mirella, San Miguelito, Monte Bello Pte. San Mauricio, Santa Cristina, Lorena

2) Cuántas personas viven en el Area de Influencia de la Unidad?

62,500

3) Cuántas personas son atendidas diariamente?

200

4) Hay falta de agua potable? No

Hay servicio de alcantarillado? Sí

5) De dónde proviene la demanda?

Zacamil, El Volcán, San Ramón, San Antonio

ENCUESTA DE AREA DE INFLUENCIA
Y NUMERO DE POBLACION CUBIERTA

UNIDAD DE SALUD BARRIOS

1) QUE COLONIAS CUBRE LA UNIDAD?

R/ Col. Escalón	Urb. Guerrero	Col. San Francisco
Col. Lomas Verdes	Col. Carmita	Col. San Mateo
Col. Dordelly	Ba. Santa Lucia	Col. La Floresta
Col. El Mirador	Col. Escalón Pte.	Col. Las Mercedes 1,2
Col. Campestre	Cantón El Carao	Col. General Arce
Col. Miramontes	Urb. Tazumal	Col. San Benito
Col. Toluca 1, 2	Col. Flor Blanca	Urb. La Mascota
Col. Miramontes Pte.	Centro	Urb. Maquilishuat.
Col. Yumuri	Tupurio Atonal	

Comunidades:

El Pradro	Corazón de María
Las Cajas	La Mascota
Valle de Oro 1,2,3,	La Paz
Sagrado Corazón	Cristo Redentor
12 Octubre	Cecilio del Valle
Núñez Arrue	San Pablo
La Pedrera	Altos San Francisco
Istagua	
Rovira	
San José de la Montaña	
El Progreso	
La Fortaleza	
El Manguito	
Las Palmas	

2) CUANTAS PERSONAS VIVEN EN EL AREA DE INFLUENCIA DE LA UNIDAD?

R/ 79,000 personas

3) CUANTAS PERSONAS SON ATENDIDAS DIARIAMENTE?

R/ 150 Pac. en Consulta Médica
30 " en Consulta Dental
200 Curaciones, inyecciones
20 Inyecciones,

Disminuye en esta época.

4) HAY FALTA DE AGUA POTABLE?

R/ NO

HAY SERVICIO DE ALCANTARILLADO?

Si existe.

5) DE DONDE PROVIENE LA DEMANDA?

R/ De las Zonas mencionadas, atienden algunas que pertenecen a Monserrat, por la accesibilidad de esta Unidad, Puerto La Libertad, Zaragoza, Jardines de Guadalupe, La Sultana, Ciudad Merliot.

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ENCUESTA DE AREA DE INFLUENCIA
Y NUMERO DE POBLACION CUBIERTA.

UNIDAD DE SALUD MONSERRAT

1) QUE COLONIAS CUBRE LA UNIDAD?

R/ Límites: Arenal Tutunichapa
Antigua C. a Huizúcar
Lomas de Candelaria
Límite con C. Sta. Tecla
Los de Huizúcar
Autopista Sur - 49 Av. Sur
Arenal la Mascota
Col. Harrison.

2) CUANTAS PERSONAS VIVEN EN EL AREA DE INFLUENCIA DE LA UNIDAD?

R/ 79,519 Población Urbana.

3) CUANTAS PERSONAS SON ATENDIDAS DIARIAMENTE?

R/ 70 personas Consulta Médica
20 " Consulta dental (depende de la época del año
variando la fecha de escuelas
Unidad en malas condiciones).

100 Curaciones e inyecciones,
vacunas.

4) HAY FALTA DE AGUA POTABLE?

R/ Se recoge en barriles - solo llega en la tarde.

HAY SERVICIO DE ALCANTARILLADO

No existe problema, existen filtraciones en el techo.

5) DE DONDE PROVIENE LA DEMANDA?

Autopista Sur	Bambú 1, 2, 3, 4,	Col. La Constancia
Huizúcar	10 Septiembre	Las Brisas
Sta. Anita	Col. Luz	Lomas de Candelaria
Los Arcos	3 de mayo	Col. Dolores
Sta. Ursula	Los Héroes	Col. IVU
Col. Dina	Manquito Sur	Monserrat

ENCUESTA DE AREA DE INFLUENCIA
Y NUMERO DE POBLACION CUBIERTA.
UNIDAD DE SALUD SAN JACINTO

1) QUE COLONIAS CUBRE LA UNIDAD ?

R/ Col.Santa Clara	Col.Costa Rica
Col.Canteras de Dragón	Col. Minerva
Col.San Rafael	Res.Modelo
Col.Las Brisas	Col.La Providencia
Col.Costa Rica No.2	Col.Málaga
Col.Lac Margaritas	Cond.Sevilla
Col.El Carmen	Santa Anita
Col. Guerrero	Col.San Juan
Col.Davidson	Col.Bello San Juan
Col.Guerrero	Col.Jardines San Marcos
Col.El Carmen	Col.Las Brisas
Col. Manzano	Col.Israel
Col. Modelo	Col.California
Campam.Modelo.	Col.California No.2
Col.Las Brisas No.1	Col.Montecristo
Col.Doleres	Col.América
Col.San Rafael	Candelaria
Col.Las Brisas	San Jacinto
Rep.Los Lencas	Col.Ferrocarril
Col.Las Lomitas	Barrio La Vega
Col.Nicaragua	Lot.Quinta California
Reparto San Patricio	Col.Res.San Jacinto
Col.San Cristobal	Col.Militar
Col.Suay	Res.Terranova
Lotificación Escamote	Urb.America
Col.Lourdes	Col.Alfa
Col.Jerusalén	Col.Buena Vista
Col.San José	Col.El Cocal
Col.México	Rep.Santa Clara

Col. Esmeralda
Col. Menjivar
Col. Buenos Aires
Rep. Santa Marta 1
Rep. Santa Marta 2
Col. Santa Carlota
Urb. Cuscatlán
Cil. Miraflores
Col. Los Naranjos.

2) CUANTAS PERSONAS VIVEN EN EL AREA DE INFLUENCIA DE LA UNIDAD?
R/ 124,142 Población Urbana

3) CUANTAS PERSONAS SON ATENDIDAS DIARIAMENTE?
R/ 160 pacientes antes del terremoto eran 190

4) HAY FALTA DE AGUA POTABLE?
R/ Casi normalmente

HAY SERVICIO DE ALCANTARILLADO?
Esta bien

5) DE DONDE PROVIENE LA DEMANDA?
R/ Areas que corresponden a San Jacinto es el porcentaje más
alto, los demás de las otras áreas aledañas hasta San Mar-
cos.

ENCUESTA DE AREA DE INFLUENCIA Y
NUMERO DE POBLACION CUBIERTA

Unidad de Salud de Concepción

1) Qué colonias cubre la Unidad?

Zona 1

Col. Santa Eugenia /
Barrio San José /
" Concepción /
" El Calvario (una parte) /

Zona 6

Col. Las Mercedes /
" La Joya /
" San Judas /
" Lourdes /
Barrio Cisneros /
Reparto Maquilishuat /
Campamento Policía de Hacienda /
" Renzo IRCA /
Urbanizac. Lourdes Ote. /

Límites: Norte arenal Tutunichapa
Sur 4a. Calle Oriente
Ote. Río Acellhuaté MOLSA
Pte. 19 Av. Norte

2) Cuántas personas viven en el Area de Influencia de la Unidad?

84.625 según MIPLAN 84

3) Cuántas personas son atendidas diariamente?

287

4) Hay falta de agua potable?

No

Hay servicio de alcantarillado?

Si

5) De dónde proviene la demanda?

50% urbana
29% Soyapango
15% C. Delgado y Apopa
4% Varios

ENCUESTA DE AREA DE INFLUENCIA Y
 NUMERO DE POBLACION CUBIERTA

Unidad de Salud de San Miguelito

1) Qué colonias cubre la Unidad?

Zona 7.

Pasaje La Castellana ✓	Comunidad Cristino Garay
Colonia Panamá ✓	Comunidad Grecia
" La Campiña 1, 2, 3 ✓	Col. Atonal
" San Joaquín Poniente ✓	Com. Lavaderos Públicos
" La Campiña No. 1 ✓	Colonia Tutunichapa ✓
Residencial Italia ✓	Com. Tutunichapa # 3 ✓
Urbanización Toscana ✓	
Centro Urb. Atlacatl ✓	
Colonia Rodezno ✓	
Reparto Gavidia ✓	
Campamento Municipal La Isla # 1 ✓	
Colonia 5 de noviembre ✓	
Centro Urb. Guatemala No. 1 ✓	
Colonia Amaya ✓	
" Magaña ✓	
" Mugdan ✓	
Centro Urb. Guatemala No. 2 ✓	
Campamento 3 de mayo ✓	
Colonia El Bosque ✓	
" La Esperanza ✓	
" El Hogar ✓	
" El Encanto ✓	
" Jardines de Mompegón ✓	

Zona No. 8

Colonia Shangrila ✓	Reparto Don Rúa ✓
" Vairo ✓	San Miguelito ✓
" Belem ✓	Urbanización Palomo ✓
Residencial San Carlos ✓	Colonia Palomo ✓
Colonia Arcadia ✓	" San José ✓
" San Carlos ✓	" Isidro Menéndez ✓
Urbanización Ajda ✓	Urbanización Santa Adela ✓
Colonia Santa Rosa ✓	" La Esperanza ✓
Urbanización Elisa ✓	Colonia Centroamérica ✓
Pasaje California ✓	" Santa Victoria ✓
Colonia Layco ✓	Comunidad El Paraíso
Comunidad El Bambular	Col. Libertad
Cuartel San Carlos ✓	Guardia Nacional
Colonia Universitaria ✓	Comunidad La Fosa ✓
Colonia El Refugio ✓	Comunidad Serpas
Mesón Serpas	Area San Luis
Col. Las Pavas	Col. El Roble

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Unidad de Salud San Miguelito

Pasaje 3 de Mayo
Colonia Florencia

Colonia Las Rosas No. 1
Comunidad San José

Limitantes: Norte: Arenal de Mejicanos; Sur: Arenal Tutunichapa; Ote. Prolong.
Tutunichapa-Río Urbina; Pte.: Av. Bernal.

2) Cuántas personas viven en el área de influencia de la Unidad?

112.956

3) Cuántas personas son atendidas diariamente?

Consulta médica Rx, Odontología, curaciones, laboratorio infantil,
vacunaciones.

723 personas

4) Hay falta de agua potable?

No

Hay servicio de alcantarillado?

Si

5) De dónde proviene la demanda?

Comunidades.

EOM/gmch.
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ENCUESTA DE AREA DE INFLUENCIA Y
NUMERO DE POBLACION CUBIERTA

Unidad de Salud de Ciudad Delgado

1) Qué colonias cubre la Unidad?

Colonia Carolina /	Colonia Carmen /
" Guadalupe /	Barrio Aculguatán /
" Mira Sol /	" Santa Lucía /
" San Fernando /	" Santa Marta /
" El Mirador /	" San Francisco /
" Monte Carlos /	" San Joaquín Ote. /
" San Vicente /	" San Sebastián /
" Hunayco /	" Villatoro /
" San Rafael	Reparto 12 de octubre /
" Las Delicias /	Colonia Acolguacán /
" Humberto /	" Cuscatlán /
" Patricia /	" Santa Alegría /
" Patricia No. 2 /	Reparto Lomas del Río /
" Guadalupe /	" Entre Ríos /
" Paleca /	Colonia Beatriz /
" Hernández /	Reparto Cartografía /
" Bolívar /	Colonia Klein /
" San Pedro /	" Rosa Atlacatl /
Reparto del Norte /	Barrio Las Victorias /
Colonia Los Alpes /	" Guadalcanal /
Pasaje Diana /	" Agua Caliente /
" San Vicente de Paúl /	La Garita /
" Casa Blanca /	
" Santa Paula /	
" Morazán /	
" California /	

Limites: Soyapango, Apopa, Tonacatepeque, Cuscatancingo, San Miguelito y Concepción.

2) Cuántas personas viven en el área de influencia de la Unidad?

Urbana	68.489
Rural	29.633
Total	<u>98.122</u>

3) Cuántas personas son atendidas diariamente?

81, oscilando 133

Actualmente el número ha disminuido por las cortas y unidades móviles; hay demanda insatisfecha por el cuerpo médico.

Ciudad Delgado (Continuación)

4) Hay falta de agua potable?

A causa del terremoto hay tuberías rotas pero en la Unidad, dentro del área existe agua potable en el límite norte al Km. 5

Hay servicio de alcantarillado"

La Unidad tiene servicio de alcantarillado, la zona urbana tiene y la zona rural no tiene.

5) De dónde proviene la demanda?

La mayor demanda proviene del área urbana, la rural tiene la limitante del transporte.

EOM/gmch
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ENCUESTA DE AREA DE INFLUENCIA
Y NUMERO DE POBLACION CUBIERTA

UNIDAD DE SALUD AMATEPEC

1) ¿QUE COLONIAS CUBRE LA UNIDAD?

R/ Amatepec

Credisa

Atonal

22 de Abril

Labor 1

Labor 2

10. Enero

Frac. Morazán

Altos del Cerro

San Rafael

Buena Vista

San Luis Portal

Santa Marta No.2

Florencia

Girasoles

Monte María

Comunidad Monte María

Col. Fé y Alegría.

2) CUANTAS PERSONAS VIVEN EN EL AREA DE INFLUENCIA DE LA UNIDAD?

R/ 50,000 hab. (estimado)

3) CUANTAS PERSONAS SON ATENDIDAS DIARIAMENTE?

R/ 200 personas

150 Consulta Externa, controles, Materno Infantil

70 Epidemiología transmisible.

4) HAY FALTA DE AGUA POTABLE?

En un 90% no existe este servicio en casa poseen chorros comunes.

HAY SERVICIO DE ALCANTARILLADO

En un 90% no cuentan con los servicios
Se sirven de fosa séptica.

5) DE DONDE PROVIENE LA DEMANDA?

Las Colonias mencionadas que cubre la Unidad.

ENCUESTA DE AREA DE INFLUENCIA
Y NUMERO DE POBLACION CUBIERTA

UNIDAD DE SALUD LOURDES

1) QUE COLONIAS CUBRE LA UNIDAD?

R/ Barrio San Esteban
Centro Urbano Lourdes
Col. El Paraíso
Col. Gallegos
Col. El Molino
Col. El Granjero 1 - 2
Col. Bolivar
Col. San Luis Portales
Col. San Martín
Col. El Coro
Col. Quiñónez
Col. La Chacra
Comunidad Peralta
Comunidad FENADESAL.

2) CUANTAS PERSONAS VIVEN EN EL AREA DE INFLUENCIA DE LA UNIDAD?

R/ 50,824 población total
- 1 año 1,577
1-4 años 5,291
5-14 años 11,131
15 más 33,025.

3) CUANTAS PERSONAS SON ATENDIDAS DIARIAMENTE?

R/ 75 personas promedio (consulta general)

4) HAY FALTA DE AGUA POTABLE?

70% falta agua potable.

HAY SERVICIO DE ALCANTARILLADO?

70% falta alcantarillado - poseen fosa séptica batería de letrina

30% lo tienen

5) DE DONDE PROVIENE LA DEMANDA?

Las Colonias mencionadas que cubre la Unidad.

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ENCUESTA DE AREA DE INFLUENCIA
Y NUMERO DE POBLACION CUBIERTA

UNIDAD DE SALUD SANTA LUCIA

1) QUE COLONIAS CUBRE LA UNIDAD?

R/ Las Palmas

Santa Eduvigés

Monte Cristo

Jardines de Santa Lucía

Com. Banco Hipotecario

Com. Santa Lucía

Santa Lucía

California No.3

Lotif. Vasquez

Col. San Cayetano

Col. Magnolias

Reparto Venecia

Caserio Pleites

Matazano 1, 2, 3

Col. Vasquez

Santa Lucía Poniente

Valle Nuevo 1 y 2

Caserio San Luis

Santa Lucía No.2

Com. Divina Providencia

Com. Divino Salvador

Col. San Rafael

Col. Díaz

Com. Chahuito

Urb. La Paz

Divina Providencia.

2) CUANTAS PERSONAS VIVEN EN EL AREA DE INFLUENCIA DE LA UNIDAD?

R/ Promedio 100,000 hab. *2011*

3) CUANTAS PERSONAS SON ATENDIDAS DIARIAMENTE?

R/ 125 diarias - durante todo el día

4) HAY FALTA DE AGUA POTABLE?

En un 10% de la población atendida

HAY SERVICIO DE ALCANTARILLADO

En un 90% lo tienen.

5) DE DONDE PROVIENE LA DEMANDA?

R/ Soyapango - Amatepec, San Martín de toda la jurisdicción.

S O Y A P A N G O

ENCUESTA DE AREA DE INFLUENCIA
Y NUMERO DE POBLACION CUBIERTA

1) Qué colonias cubre la Unidad? (Colonias y Zonas marginales)

	Con agua y alcantarillado
1- Colonia San José I, II y III /	" " "
2- Col. Bosques del Río /	" " "
3- Col. Monte Blanco /	" " "
4- Col. Guayacán /	" " "
5- Col. El Pepeto /	" " "
6- Jardines del Pepeto /	" " "
7- Col. El Carmen	" " "
8- Col. Montes de San Bartolo /	" " "
9- Col. Los Cañacastes /	" " "
10- Col. Santos 2 /	" " "
11- Col. Santos 1 /	" " "
12- Col. Coruña 1 /	" " "
13- Col. Coruña 2 /	" " "
14- Col. San Fernando	" " "
15- Urb. Las Flores /	" " "
16- Col. Prados de Venecia E, 2, 3. /	" " "
17- Col. Residencia Guadalupe /	" " "
18- Col. Guadalupe /	" " "
19- Col. Suyapán /	" " "
20- San Cristóbal /	" " "
21- Reparto Morazán 1 y 2 /	" " "
22- Reparto Las Brisas Ote. /	" " "
23- Reparto Las Brisas Pte. /	" " "
24- Reparto San Nicolás /	" " "
25- Reparto Monte Carmelo /	" " "
26- Reparto Santa Rita /	" " "
27- Reparto San Pablo /	" " "
28- Reparto Las Arboledas /	" " "
29- Colonia Santa Cecilia /	" " "
30- Colonia Bella Vista /	" " "
31- Colonia Los Alpes /	" " "
32- Colonia Las Flores /	" " "
33- Colonia Lomas del Río 1 /	" " "
34- Colonia Lomas del Río 2 /	" " "
35- Colonia Escalante /	" " "
36- Colonia Cuscatlán /	" " "
37- Colonia San Antonio /	" " "
38- Colonia Quiroz /	" " "
39- Colonia Rivera /	" " "
40- Colonia La Providencia /	" " "
41- Colonia Los Laureles /	" " "
42- Colonia La Floresta /	" " "
43- Colonia Sierra Morena	" " "
44- Colonia Contreras /	" " "
45- Colonia El Progreso	" " "

SOYAPANGO

Con agua y alcantarillado

46- Colona San Enrique	"	"	"
47- Colonia Campamento Morazán	"	"	"
48- Col. Comunidad El Matazano	"	"	"
49- Colonia Morazán	"	"	"

COLONIAS Y ZONAS MARGINALES DE SOYAPANGO

Sin agua y sin alcantarillado

1- Colonia Rivera	Sin agua		
2- Colonia California	Sin agua		
3- Comunidad El Cacao	Sin agua		
4- Col. Rivera		Sin alcantarillado	
5- Col. California		"	"
6- Col. San Isidro		"	"
7- San Carlos		"	"
8- Col. Marily		"	"
9- Col. Villa de Jesús		"	"
10- Col. España		"	"
11- Comunidad California		"	"
12- Col. San Antonio N°2		"	"
13- San Isidro	Solo con agua		
14- Col. San Carlos	"	"	"
15- Col. Marily	"	"	"
16- Col. Villa de Jesús	"	"	"
17- Col. España	"	"	"
18- Col. Comunidad California	"	"	"
19- Col. San Antonio N°2	"	"	"

2) Cuántas personas viven en el Area de Influencia de la Unidad?

100.000 hab. /86 Campaña de Vacunación promedio

3) Cuántas personas son atendidas diariamente?

266 Consulta General

En base al recurso que se tiene.

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4) Hay falta de agua potable? Sí

En un 5% de la población que cubra la Unidad.

Hay servicio de alcantarillado? Sí En un 90% de los habitantes que cubre la Unidad.

5) De dónde proviene la demanda?

De toda la jurisdicción.

/mcdm.

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APPENDIX 5

UNCLASSIFIED
Department of State

Clay
12/1
INCOMING
TELEGRAM

PAGE 01 SAN SA 14892 2615272 4298 872905 A102553
ACTION AID-00

SAN SA 14892 2615272 4298 872905 A102553

3. PROPOSED SCOPE OF WORK IS AS FOLLOWS:

ACTION OFFICE LAOR-03
INFO LAEM-02 LACE-02 LAOP-04 AMAD-01 MAY-01 SINC-02 STPO-01
SAST-01 RELO-01 /018 AB

A) REVIEW OPERATING AND FIXED COSTS OF THE CURRENT CONFIGURATION OF NON METRO HEALTH FACILITIES.

INFO LOG-00 COPY-01 /001 W
-----257601 2616442 /46

B) PREPARE AN ANALYSIS OF CAPITAL AND OPERATING COSTS OF VARIOUS POSSIBLE CONFIGURATIONS OF FACILITIES WHICH WOULD RESPOND TO THE TECHNICAL REQUIREMENTS FOR HEALTH SERVICES IN THE METRO REGION.

P 250104Z NOV 86
FM AMEMBASSY SAN SALVADOR
TO SECSTATE WASHDC PRIORITY 6889

C) COSTS OF SPECIFIC SERVICES UNDER DIFFERENT OPERATIONAL MODES.

UNCLAS SAN SALVADOR 14892

D) EXPLORE POSSIBLE FINANCIAL RESOURCES INCLUDING THOSE OF NON AND OTHER DONORS TO MEET CAPITAL AND RECURRING COSTS.

FOR: LAC/OP/AN ST/HEALTH

E) PROJECT FUNDING REQUIREMENTS FOR THE PROPOSED CALENDAR OF CONSTRUCTION.

E.O. 12356: N/A
SUBJECT: HEALTH CARE FINANCING: TECHNICAL ASSISTANCE REQUEST

4. PLEASE RESPOND ASAP AS PAND EXPERTS ARE EXPECTED TO BEGIN WORK O/A NOVEMBER 26. ←

REF. (A) STATE 345335, (B) FEENEY/GIBSON TELCON 11/12/86

5. EMBASSY RECOMMEND: THIS TRAVEL. DLOUNY

1. USAID SAN SALVADOR REQUESTS AID/W ASSISTANCE TO IDENTIFY AND OBTAIN SERVICES OF 1-2 TECHNICAL EXPERTS IMMEDIATELY FOR UP TO FOUR WEEKS EACH UNDER CENTRALLY FUNDED REACH PROJECT TO WORK AS MEMBERS OF PAND COORDINATED TEAM WORKING WITH NON TEAM TO DEVELOP A GLOBAL PLAN FOR RECONSTRUCTION AND DEVELOPMENT OF SERIOUSLY DAMAGED HEALTH SERVICE FACILITIES NETWORK IN THE METROPOLITAN SAN SALVADOR AREA. TECHNICIANS SHOULD BE FLUENT IN SPANISH AND HAVE SKILLS AND LOG EXPERIENCE IN HEALTH CARE FINANCIAL ANALYSIS AND HEALTH FACILITIES COSTING AS DESCRIBED PARA 3 BELOW.

2. BACKGROUND: AS RESULT OF OCTOBER 18 EARTHQUAKE, MANY METROPOLITAN SAN SALVADOR HEALTH FACILITIES, BOTH HOSPITALS AND OUTPATIENT FACILITIES, SUFFERED EXTENSIVE DAMAGE. RECONSTRUCTION PLANNING IS BEING CONSIDERED IN TERMS OF IMPROVING ACCESS TO SERVICES AND DECENTRALIZATION AND DECONCENTRATION OF SERVICES. THE BASIC FUNCTIONS OF THE INTEGRATED PLANNING TEAM WILL BE TO:

A) DEVELOP AN EMERGENCY PLAN WHICH INCLUDES ACTIONS NECESSARY TO RESTORE THE OPERATIONAL AND FUNCTIONAL CAPACITY OF METROPOLITAN HEALTH SERVICES; AND

B) INCORPORATE PROGRAMMATIC, BUDGETARY AND ADMINISTRATIVE MODIFICATIONS FOR THE REGENERATION WHICH IN A LATER STAGE WILL BRING REORGANIZED HEALTH SERVICES CLOSER TO THE POPULATION.

RECONSTRUCTION WILL REQUIRE CAREFUL PLANNING TO ENSURE THAT REPLACEMENT FACILITIES PROVIDE OPTIMAL RESPONSE TO CURRENT AND FUTURE NEEDS OF THE METROPOLITAN POPULATION FOR MINISTRY OF HEALTH SERVICES, THIS NECESSITATES THAT FINANCIAL ISSUES BE CAREFULLY EXAMINED ALONG WITH DEMOGRAPHIC AND TECHNICAL REQUIREMENTS. PAND HAS REQUESTED THAT AID PROVIDE A FINANCIAL TECHNICIAN OR TECHNICIANS FOR THIS PLANNING TEAM. THE INTERNATIONAL TEAM WILL BE COMPOSED OF HOSPITAL ADMINISTRATOR (PHYSICIAN) AND HEALTH SERVICES PLANNER, ARCHITECT, NURSE AND ECONOMIST. THE TEAM WILL ASSIST AND COLLABORATE WITH THE NON TO DEVELOP A DETAILED PLAN FOR RECONSTRUCTION OF HEALTH FACILITIES IN THE METROPOLITAN REGION. IT IS EXPECTED THAT THE PLAN WILL HELP TO ATTRACT FUTURE FINANCING FROM VARIOUS DONORS.

*SWAN
REACH*

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