



## DEPARTMENT OF HEALTH &amp; HUMAN SERVICES

## Memorandum

Date February 18, 1982

From Visiting Scientist, Epidemiologic Studies Branch, Family Planning Evaluation Division, Center for Health Promotion and Education (CHPE)

Subject Foreign Trip Report (AID/RSSA): El Salvador, August 9-19, 1981

To William H. Foege, M.D.  
Director, Centers for Disease Control  
Through: Horace G. Ogden \_\_\_\_\_  
Director, CHPE

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## SUMMARY

During August 9 to 19, 1981, I visited San Salvador, El Salvador to provide follow-up technical assistance to the El Salvador Ministry of Public Health (MOH) in the preparation and discussion of a final report of the Patient Flow Analysis (PFA) Study conducted in 24 MOH clinics and in the implementation of recommendations derived from this study. In addition, the progress of the IUD study for which CDC is providing technical assistance in data management and analysis was reviewed.

The results of the PFA study show that although there are differences between the clinics, most of the problems identified by PFA were common to most of the clinics; for this reason common recommendations were developed that can be implemented not only in the 24 study clinics, but also in most of the clinics in El Salvador. A draft of the final report of the PFA study was discussed with MOH personnel. The results and recommendations were accepted by the participants in these discussions and it was decided to start implementing the recommendations in one of the five Health Regions of the Ministry of Health. A tentative plan of implementation was proposed.

The IUD study is a prospective study started in February 1978 investigating the use continuation rates and reasons for discontinuation of the Copper T and Lippes Loop. The registration of patients into the study was closed in January 1981 with 4,025 cases, but the collection of follow-up data continued until August, so that all patients have at least six months of follow-up.

Reviewing the records of cases that entered the study in 1978 it was determined that more than 50% were lost to follow-up before completing a period of 2 years. Plans were made to visit a sample of these women to learn their IUD use continuation status and reasons for not returning to visit the clinic. I brought to Atlanta the forms of women who registered during 1978 to initiate coding and editing procedures at CDC. A visual edit of the remaining forms is being carried out in the Statistics Department of the MOH before being sent to CDC.

#### I. PLACES, DATES, AND PURPOSE OF TRAVEL

El Salvador, August 9-19, 1981, at the request of USAID/El Salvador, AID/POP/FPSD, and the Ministry of Health (MOH), to provide follow-up technical assistance to the El Salvador MOH in the preparation of a final report for the Patient Flow Analysis (PFA) study conducted in 24 MOH study clinics in August and September 1979 (See CDC/RSSA Foreign Trip Report: El Salvador, dated January 5, 1981), and in the implementation of recommendations derived from this study. In addition, the progress of the MOH IUD continuation study was monitored (see CDC/RSSA Foreign Trip Report: El Salvador, dated January 5, 1981). This travel was in accordance with the Resource Support Services Agreement (RSSA) between the Office of Population, AID, and CDC/CHPE/FPED.

#### II. PRINCIPAL CONTACTS

##### A. USAID/El Salvador

Ms. Chris Loken, Population Officer

##### B. Ministry of Public Health

1. Dra. Vilma H. de Aparicio, Director, Planning Department
2. Dr. Raul Moran Tejada, Director, Operative Services
3. Dr. Carlos Sagastume, Director, Department of Statistics
4. Dr. Jose Montez, Chief, Division of Maternal and Child Health and Family Planning (MCH/FP)
5. Dr. Vitelio Rodriguez, Operative Services
6. Lic. Ricardo Castaneda Rugamas, Planning Department
7. Dr. Raul Toledo, MCH/FP
8. Dr. Jorge Roberto Cruz Gonzalez, MCH/FP

#### III. PREPARATION OF FINAL REPORT, PATIENT FLOW ANALYSIS (PFA)

#### A. Background

This was the sixth consultation provided to the El Salvador MOH related to the PFA study (see CDC/RSSA Foreign Trip Reports: El Salvador, dated April 25, June 7, and September 4, 1979; April 9, 1980, and January 5, 1981). PFA studies were conducted in 24 MOH clinics during August and September 1979. Separate reports of the interpretation of the PFA outputs for each clinic were written by regional supervisors after presentation and discussion of the results with clinic personnel. Based on these reports and additional interpretation of the PFA outputs with other MOH and PEB/FPED technical staff, a draft of a final report was written.

In the 24 clinics, five different categories of health establishments were represented. The categories are:

1. hospitals,
2. health centers,
3. health units with specific FP programs,
4. health units with integrated FP programs, and
5. health posts.

Although there are differences between the categories, common problems were identified being different only in the magnitude; for this reason common recommendations were developed that can be implemented not only in the 24 study clinics, but also in most of the clinics in El Salvador.

The Spanish language draft report was sent to Dr. Raul Toledo, our counterpart and principal contact in the El Salvador MOH, in March 1981 for review and discussion at the MCH/FP Division and Operative Services Department in the MOH. Dr. Toledo was scheduled to leave the MOH on August 15 and Dr. Jorge Cruz became responsible for the project at the MCH/FP Division and our principal contact at the time of this consultation.

#### B. Highlights of the Study Findings

The following five major problems were identified:

1. Excessive time spent by patients in the clinics,
2. Short service time for the patients,
3. Incomplete visits (according to MOH requirements),
4. Improper utilization of personnel, and
5. Excessive demand in some clinics.

To resolve these problems the following recommendations were discussed:

1. Develop a system to stagger the arrival of patients,
2. Serve patients in order of arrival,

3. Begin serving patients in the hour scheduled,
4. Give priority during clinic hours to clinical work over administrative work,
5. Take steps to assure that patients receive needed services,
6. Organize work assignments so that staff do not change tasks frequently,
7. Assign more personnel to those clinics which show greater demand.

These major problems, their principal causes, and recommendations for their solution are discussed in more detail in Appendix A.

#### C. Presentation and Discussion of the Final Report

During this consultation the draft of the final report was discussed in various meetings with staff members of the MCH/FP Division, Operative Services Department, and Planning Department of the MOH. While many questions were raised and discussed, the results and recommendations were accepted by the participants in these discussions. The presentation and interpretation of a computer simulation of patient flow, previously prepared at CDC, was very useful in explaining the effect of the recommended changes.

#### D. Implementation of Recommendations

Some of the recommendations have already been implemented in some of the 24 studied clinics. However, the need to implement these recommendations in all the MOH clinics still exists. Due to the present situation in the country, and for economic reasons, the representatives of the MCH/FP Division, Operative Services Department, and Planning Department decided to implement the recommendations in only one of the five health regions of the MOH at this time--the West Region was chosen.

A tentative plan of implementation was proposed with the following four stages:

1. Present the results of the PFA study to the directors of the Regional Health Offices and Hospitals of the MOH.
2. Develop guidelines for the implementation of recommendations for presentation and discussion at a workshop with the supervisors and technical staff of the Western Health Region.
3. Present the results of the PFA study and provide the guidelines for the implementation of recommendations to the directors and other administrative and clinical personnel of the health establishments of the Western Region during workshops conducted by the regional personnel.
4. Supervise the implementation of recommendations by the Regional Supervisors making visits to the clinics.

It was proposed that an evaluation of the changes should be made before continuing implementation of the recommendations in the other four health regions.

#### E. Publication Strategy

A publication describing the study findings was discussed with Dra. Vilma de Aparicio and Dr. Raul Moran during the previous consultation (see CDC/RSSA Foreign Trip Report: El Salvador, dated January 5, 1981) they will be co-authors of this publication designed to reach family planning program administrators in Latin America. A draft of an article for publication was prepared and discussed during this consultation and approved by the co-authors. A final version is in preparation for editorial clearance.

### IV. IUD STUDY

#### A. Background

A prospective study comparing the Copper T and Lippes Loop IUDs was initiated in February 1978 in 12 family planning clinics of the MOH. The purpose is to measure and compare the use continuation rate and reasons for discontinuation, including side effects, expulsion, personal reasons, and pregnancy. Data are collected on an initial form that is completed at the time an IUD is inserted, and follow-up forms are completed each time the patient revisits the clinic. Follow-up visits are programmed two and six months after insertion and thereafter every six months. The registration of patients in to the study was closed in January 1981 when 4,025 cases had been included. However, the collection of follow-up forms continued until August so that all patients have at least six months of follow-up.

#### B. Status of Study

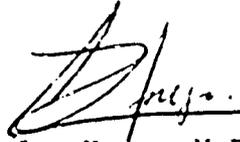
During this consultation the records of cases that entered the study in 1978 were reviewed to determine the proportion of women who have a completed follow-up. Of 1,168 cases, 450 discontinued using the IUD for various reasons, 125 completed 2 years of follow-up using the IUD, and 658 were lost to follow-up before the 2 year period. Of the cases lost to follow-up, 503 had at least one follow-up visit and 155 women never came back to the clinic after the IUD insertion.

It has been hypothesized that women lost to follow-up may have different use continuation rates than women who have complete follow-up; no plans have been made to visit a sample of women lost to follow-up to learn their IUD use continuation status and reasons for not visiting the clinic.

At the end of my trip I brought to Atlanta the forms of women who registered in the study during 1978 to initiate coding and editing

procedures at CDC. A visual edit of the remaining forms is being carried out in the Statistics Department of the MOH before being sent to CDC.

Arrangements were also made for Dr. Raul Toledo to come to CDC to work on the design of a questionnaire for the survey of women who have been lost to follow-up and to participate in the development of a code sheet for the editing and analysis of data. He would also participate in a review of PFA results following computer simulation. However, since he resigned from the MOH, Dr. Jorge Cruz, his replacement, was invited to visit CDC for the same purpose.



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## APPENDIX A

### SUMMARY OF FINDINGS AND RECOMMENDATIONS FROM PFA REPORT

Upon interpretation of the PFA outputs it was found that although each clinic had its own set of problems, certain problems were common to most of the clinics. The following five major problems were identified:

- (1) Excessive time spent by patients in the clinics.
- (2) Short service times for the patients.
- (3) Incomplete visits (according to MOH requirements).
- (4) Improper utilization of personnel.
- (5) Need for additional resources in some clinics.

These major problems, and their causes are discussed below.

#### Problem 1. Excessive Time Spent by Patients in Clinics

Long times in-clinic was identified as a problem in all the clinics, varying in magnitude from clinic-to-clinic, but being especially serious in integrated clinics (see Table 1). Average time in clinic ranged from 107 to 202 minutes for new acceptors. The factors contributing to the long time-in-clinic include:

- (a) Patients arrived early in relation to being served by a physician or nurse practitioner in 23 of the 24 clinics. This was the result of factors largely dependent on the type of patient scheduling used. Two types of scheduling were observed:
  - (1) In the all health posts and most of the Units II a block system was used in which all patients were scheduled for the same time, usually early in the morning. This results in very long waits for patients at the end of the queue. The waiting time is further aggravated by the tendency of patients to arrive much earlier than the clinic opening time to be at the beginning of the queue. Resulting times-in-clinic of 3 or more hours were not infrequent.
  - (2) In the hospitals more than 50 percent of the patients had appointments, and appointments were staggered (not all at the same time). However, only in one hospital were the appointments well-coordinated with the time that the staff was ready to serve them. In the others there was a tendency to appoint patients much too early--in some cases three hours before the physician began serving them. Some patients shortened their waits by arriving late--an apparent expression of lack of confidence in the system's ability to serve them on a timely basis.

In the health centers and Health Unit I, either of the scheduling systems were used, again resulting in long waits.

- (b) In 17 clinics the patients were not served in order, resulting in longer waits for patients who arrived early than later arriving patients. In some of the larger clinics patients arrived in large blocks and appeared to be served at random at every station in the clinic, resulting in long waits for all patients and a large number of patients in the waiting room at all times.

In some clinics, groups of patients were served in the exact inverse of their order of arrival. This usually occurs when patient records are stacked on top of each other as the patients arrive. Staff then begin serving the patients by taking the record on top (belonging to the last patient to arrive).

- (c) In 11 clinics the physician began serving patients much later than scheduled. This problem was more common in family-planning-only clinics (10 of 14) than integrated clinics (1 of 10). This caused not only long patient waits but resulted in poor utilization of other staff members.
- (d) General lack of organization and use of staff time for functions outside of the clinic caused long waits. For example, in six clinics there were long waits for an exit interview while a nurse was engaged in administrative activities or clinical activities that could have been handled by other staff. In two clinics patients had long waits for a social worker who was engaged in serving hospitalized patients.
- (e) In seven clinics patients visited more stations than necessary. This affected primarily the "resupply" patients (who need only vital signs and weight taken and a medical history update) who were mixed in with other patients. In some clinics there were long waits to pick up contraceptives at the pharmacy. These could be given to the patient at another station such as the exit interview.
- (f) In six clinics delays were caused by problems in locating patient records at the beginning of the visit. The principal cause for this was overloading of this task, especially during the early morning rush of patients.

#### Problem 2. Short Service Times for Patients

Compared with the total time that patients spent in the clinics, the time spent receiving services was short, ranging from only 1 percent to 36 percent (Table 2). It is interesting to note that this percentage is not related to the number of patients nor the availability of staff resources. For example, some Health Units 11, serving between 64 and 100 patients, demonstrate higher percentages than the hospital clinics, which served between 14 and 41 patients with superior staff and space resources.

The MOH guidelines for family planning services require 10 minutes with the physician and a 10 minute interview with a nurse. As shown in Table 2, 10 of the clinics had a physician contact time and/or a nurse contact time of 5

minutes or less. Also shown in Table 2 is that the physician served the patients for 5 minutes or less in 6 of the 14 clinics with "family planning only" clinics, and there was a hospital clinic with only 3 minutes physician time per patient. A nurse interview of 5 minutes or less occurred in three Health Units I and one Health Post.

Short physician contacts primarily resulted when the physician spent less time in the clinic than was programmed; short nurse interviews resulted from overwork of this position in some clinics, and in others was a problem of organization or ignorance of the guidelines.

### Problem 3. Incomplete Visits (According to MOH Guidelines)

The discussion of this problem refers only to family planning patients; for non-family planning patients it was not possible to differentiate the type of visit and, therefore, the required station stops.

In 11 of the 24 clinics, principally the Health Centers and Health Units, some patients apparently did not receive the services required by the MOH guidelines. The contacts most frequently omitted were "preparation of the patient" (taking vital signs and weight), and the exit interview.

Discussion with staff in clinics where this problem occurred indicated that there was a lack of knowledge of the guidelines and in two Health Posts a lack of equipment for taking blood pressure.

### Problem 4. Improper Utilization of Personnel

In 11 of the 24 clinics, personnel were not utilized efficiently. In some cases there were long periods of time when some staff members had no contact with patients, but in most cases, problems of organization of the clinic reduced the efficiency of personnel, although they were working at full capacity. For example, in one health unit five persons were working simultaneously in preparation of the patients, inventing a total of 4 person-hours in this activity. This led to bottlenecks at either this station or the subsequent station in the clinic flow. In some clinics there were extra contacts with personnel, resulting in excessive personnel time being used.

In many clinics graduate nurses were doing work that could be assigned to personnel with less training. This results not only in poor use of personnel, but can delay patients in the clinic.

None of the clinics with "family planning only" patients utilized physician time well. In fact, 10 of these 14 clinics utilized less than 50 percent of the physician's time in direct contact with patients. On the other hand, the Health Units II and Health Posts used physician personnel intensely, with only one Health Unit II using less than 50 percent of the physician's time.

The organization problems that result in poor utilization of personnel contribute to the long waits for patients. For example, if patients arrive in a large block early in the morning, there is a tendency to serve them in

blocks, with most personnel working at the first task, then switching to the second task, and so forth. This constant switching of tasks results in confusion and poor staff utilization. Another cause of long patient waits - late arrival or indefinite arrival times of physicians - also can result in poor utilization of auxiliary personnel.

#### Problem 5. Need for Additional Resources in Some Clinics

While there probably are overworked personnel in all the clinics, the problem appeared more severe in the Health Units II and Health Posts. For example, in one Health Post where six staff members served 94 patients, the physician served patients 7 hours without break. Upon discussion of results with clinic staff we were also told by staff of three "family planning only" clinics that when other tasks were combined with serving family planning patients, they too, were overworked. This problem is caused by a generally excessive demand on services related to the resources available, and PFA can document the need to increase resources to adequately serve the demand for services.

#### Special Problems of Clinics that Provide Surgical Sterilization

All hospitals and health centers provide surgical sterilization, and the patients were managed in several different ways. In five clinics the patients received the pre-operative examination and the surgery on the same day (in accordance with the guidelines). In two others the patients did not have the examination and surgery on the same day. This was usually caused by a lack of knowledge or interest in following the guidelines, and/or that the examination visit took so long that there was not time left for surgery on that day.

#### Recommendations

Recommendations were proposed for each of the 24 clinics. When common problems were detected, common solutions were proposed with adjustments to accommodate varying characteristics of each clinic. From these, recommendations applicable to all clinics in the MOH system were developed. These general recommendations, which will be discussed in more detail, are:

- (1) Develop a system to stagger the arrival of patients;
- (2) Serve patients in order of arrival;
- (3) Begin serving patients at the hour scheduled;
- (4) Give priority during clinic hours to clinical work over administrative work;
- (5) Take steps to assure that patients receive needed services;
- (6) Organize work assignments so that staff do not change tasks frequently; and
- (7) Assign more personnel to those clinics which show excessive demand.

#### Recommendation 1: Develop a System to Stagger the Arrival of Patients

The purpose of this system would be to stagger the arrival of patients so they would arrive at different times during the day when staff are ready to serve them and approximately 30 to 60 minutes before their contact with the physician. Two to three patients can be assigned an appointment every half-hour or 5 to 6 patients every hour. However, in El Salvador as well as other developing countries, lack of transportation and communication

facilities limits the use of appointments. For example, there may be only one bus each morning from outlying villages. However, patients can be instructed (during health education classes, interviews, or through mass media and advertising) to come to the clinic at various hours before or after going to the market or whatever other business they have in town. Also, women who live in the town where the clinic is located can be given staggered appointments. The system to stagger patients' arrival should be developed according to the characteristics of the clinic and the patient population. An example of such a system for a hospital clinic with 6 hours of physician time for family planning would be:

- (a) 7:00 to 9:00 a.m.--Pre-operative examination for sterilization patients (this would allow time for surgery the same day).
- (b) 9:00 to 11:00--Examination for temporary methods (if the patient opts for sterilization, surgery could be done the same day).
- (c) 11:00 to 1:00--Post-operative examination.
- (d) 1:00--Resupply of contraceptives.

This system could be used in most hospitals in El Salvador.

In clinics where family planning visits are integrated, the system could be designed for all patients. For example:

- (a) 8:00 to 9:00--Ill men;
- (b) 9:00 to 10:00--Ill children;
- (c) 10:00 to 11:00--Ill women
- (d) 11:00 and on--Preventive services, including family planning.

Again, the system needs to be developed with the needs of the patient population in mind. Also, exceptions should be made when necessary; a woman with a child, both needing services, should be served together; and emergencies are always taken as soon as possible.

In all clinics resupply should be done in the afternoon (1:00 p.m. in our examples) to avoid mixing these patients with those needing more time-consuming services.

#### Recommendation 2. Serve Patients in Order of Arrival

Patients can be easily served in order of a number (their sequence of arrival) attached to their record. Staff members at each station then serve the patients according to their number.

#### Recommendation 3. Begin Serving Patients at the Hour Scheduled

Medical personnel should be reminded, both for the patients' time and use of other personnel time, of the importance of beginning work on time.

Recommendation 4. Give Priority During Clinic Hours to Clinical Work Over Administrative Work

Personnel, especially nurses responsible for patient interviews, should give priority to clinical work, delaying administrative duties to nonclinical hours or to time late in the day when the patient load has slackened. Also, social workers shared with hospitals should organize their activities so that outpatients are not delayed.

Recommendation 5. Take Steps to Assure That Patients Receive Needed Services

The Ministry of Health established guidelines for services for family planning patients in 1973. Clinics should put in-place systems to assure that the guidelines are followed. Several methods of accomplishing this are:

- (a) Design the clinic flow so that patients progress from station to station, receiving all necessary services.
- (b) Attach a small checklist to each chart; as services are provided, they are checked off. The nurse providing the exit interview would check for completeness.
- (c) Conduct periodic patient chart reviews at random and check for documentation of required services.

Recommendation 6. Organize Work Assignments So That Staff Do Not Change Tasks Frequently.

When patients do not all arrive in one block, it is possible to assign one person to a task for the entire session rather than have several staff members assigned to the task for a short time. Also, different health education presentations can be given at different times of day when the audience composition changes.

Recommendation 7. Assign More Personnel to Clinics Which Show Excessive Demand

Careful monitoring of service statistics would allow the MOH to shift personnel from clinics with less demand to those with higher demand.

TABLE I

Patient Flow Analysis in 24 Ministry of Health Medical Facilities  
El Salvador, August-September 1979

Type of FP Clinic	Medical Facility	Patient Time (minutes) in Clinic by Type of Visit								
		Initial		Followup		Resupply		No. FP Visits		
		Aver.	Max.	Aver.	Max.	Aver.	Max.	Aver.	Max.	
S P E C I F I C  I N T E R A T E D	Hospitals									
	A	118	210	127	210	41	92	*	*	
	B	110	168	131	219	39	74	*	*	
	C	180	180	166	245	*	*	155	166	
	D	132	146	123	308	*	*	32	111	
	E	*	*	115	194	21	47	*	*	
	F	*	*	145	248	*	*	*	*	
	Centers									
	A	152	255	176	281	92	183	49	49	
	B	139	195	220	220	146	150	219	278	
	C	185	185	225	238	57	79	229	355	
	Unit I									
	A	152	255	176	281	92	183	49	49	
	B	*	*	183	200	*	*	160	216	
	C	202	217	185	247	176	246	156	290	
	D	202	261	239	355	140	164	267	362	
	E	107	142	181	216	51	75	199	240	
	Unit II									
A	*	*	*	*	*	*	141	235		
B	*	*	151	180	*	*	81	221		
C	*	*	56	62	60	122	*	*		
D	*	*	*	*	*	*	142	370		
E	*	*	250	253	*	*	196	339		
F	*	*	*	*	254	254	185	348		
Posts										
A	*	*	372	426	*	*	304	523		
B	*	*	185	240	*	*	255	365		
C	*	*	*	*	*	*	161	360		
D	*	*	251	292	*	*	162	289		

\*No family planning patients or only one patient seen in visit category.

TABLE II

**Patient Flow Analysis in 24 Ministry of Health Medical Facilities  
Patients' Time Utilization  
El Salvador, August-September 1977**

<u>Type of FP Clinic</u>	<u>Facility: Hospital</u>	<u>% Patient Time with Staff</u>	<u>Av. Patient Time with Physician (minutes)</u>	<u>Av. Patient Time with nurse (minutes)</u>
	A	15	5	7
	B	15	3	8
	C	13	7	13
	D	11	5	9
S	E	12	9	9
P	F	11	5	6
E				
C	<u>Centers</u>			
I	A	21	14	14
F	B	16	4	8
I	C	15	7	11
C				
	<u>Unit I</u>			
	A	29	4	5
	B	19	6	9
	C	9	9	5
	D	10	7	4
	E	36	6	2
	<u>Unit II</u>			
	A	13	6	19
I	B	24	11	7
N	C	17	7	16
T	D	20	12	
E	E	14	9	10
G	F	20	8	11
R				
A	<u>Posts</u>			
T	A	8	7	8
E	B	11	8	8
D	C	21	6	3
	D	11	6	8

\* Specific: Family planning only clinics.

Integrated: Family planning services integrated with general services.