



DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service
Centers for Disease Control

Memorandum

Date June 4, 1982

From Anthony A. Hudgins, Public Health Analyst, Program Evaluation Branch, Family Planning Evaluation Division, Center for Health Promotion and Education (CHPE)

Subject Foreign Trip Report (AID/RSSA): Mexico-Introduction of Computerized Patient Flow Analysis (PFA) Technique, January 10-20 and March 15-17, 1982.

To William H. Foegen, M.D.
Director, Centers for Disease Control
Through: Horace G. Caden
Director, CHPE *HGF*

SUMMARY

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SUMMARY

In January and March of 1982 two visits were made to Ciudad Juarez, Mexico to introduce a family planning service agency to the use of the computerized Patient Flow Analysis (PFA) technique. During the first visit, the data collection process was reviewed with staff of the agency and three data sets were collected. The data was processed at CDC, recommendations were developed, and computer simulations were prepared which demonstrate the potential effects of the recommendations.

Recommendations included: (1) After the initial visit, if no contraindications exist, patients should be given at least three cycles of pills at each visit. (2) Laboratory services should be arranged so that patients can have an examination and laboratory services during the same visit. (3) A system should be developed to assure that patients are served in order. (4) Physicians should slightly alter the times of day that they provide services to outpatients versus inpatients to alleviate a large backlog of patients to be served in the morning.

Results, including computer simulations presenting the effects of the recommendations were presented to medical and management staff on the second visit. After much positive discussion, the recommendations were accepted. As shown in this report, implementation of these recommendations have the

potential to reduce average patient waiting time for physicians by 83 percent and the total time spent in the clinic by 68 percent. Given the same staff and costs the clinic will be able to increase by 11 percent the number of patients they can serve. The agency plans to do a follow-up study so that the effect of changes can be measured.

The agency also expressed interest in assisting other agencies in Mexico in doing PFA studies.

I. PLACES, DATES, AND PURPOSE OF TRAVEL

At the request of FPSD/AID/W and with the concurrence of the AID representative, US Embassy/Mexico, Anthony A. Hudgins traveled to Ciudad Juarez, Mexico, on January 10-20, 1982 and March 15-17, 1982, to train personnel in a family planning service agency in that city, Centros Materno Infantil y de Planificacion Familiar (CMIPF), in the use of the computerized Patient Flow Analysis (PFA) technique. This travel was in accordance with the Resource Support Services Agreement (RSSA) between the Office of Population/AID, and FPED/CHPE/CDC.

II. PRINCIPAL CONTACTS

Centros Materno Infantil y de Planificacion Familiar (CMIPF) Ciudad Juarez

1. Sra. De La Vega, Executive Director
2. Rebeca Ramos, Director of Evaluation
3. Manuel Castillo, Administrator
4. Lorenzo Flores, Sub-Administrator

III. BACKGROUND

A. Patient Flow Analysis

Patient Flow Analysis (PFA) is a system which documents personnel utilization and patient flow in individual family planning clinics.* Its use enables management to obtain data for statistical documentation and graphical representation of a clinic session, which can be used to (1) identify problems in patient flow, (2) determine personnel and space needs, and (3) document personnel costs per patient visit. Family planning programs using PFA can measure the performance of individual clinics and identify problem areas, initiate improvements in clinic operations that will increase overall clinic efficiency and measure the results at minimal cost.** Specific anticipated benefits to be derived from the use of PFA may include reduction of patients' waiting time (and frustration) in the clinic, a more equitable distribution of workload for each staff member during the work day, and reduction of personnel costs in the clinic. Additional patients may also be served for the same or even reduced costs.

*Graves JL, AA Hudgins, J Delung, et al: Computerized patient flow analysis in local family planning clinics. Fam Plann Perspect 13:164-170, 1981.

**Hudgins AA, JL Graves, BW Abbott, et al: Issues in family planning clinic management. J Family & Community Health, 1982; 5:47-60.

Five forms (see Appendix 1) are used for data collection, of which essentially only one form (Patient Register--Form 3) is used during the conduct of the clinic session. Experience has shown that data collection does not interrupt the clinic session to such a degree that clinic behavior is modified.

Data collection is relatively simple, and processing of the data has been computerized to handle large data sets and to insure rapid turn-around of results; proper interpretation of the results requires training. Two types of output are produced by the computer programs written for PFA. One is a seven-color graphical representation of the clinic session created by an electro-mechanical plotter. The upper part of this graph illustrates the type, number, and length of each contact that the patient makes as the patient flows through the clinic and waiting time preceding each contact. The lower part of the graph displays the staff time occupied with patients and the time spent otherwise for each staff member. In addition to the graph, the PFA system produces six tables and a statistical summary. These tables include an analysis of: (1) patient arrival as related to appointment time, (2) patient service time as related to the patient's time in the clinic by visit type, (3) mean personnel cost per patient by visit type, (4) personnel utilization in the clinic by task, (5) time and cost for each clinic station by visit type and total visits, and (6) an analysis of data that pertains to each person who worked in the clinic on an individual basis.

The graphical and statistical output are examined together. In order to comprehensively interpret the output, information on personnel policy, size and arrangement of the facility, other programs conducted at the same location, personnel skills, and number of patients normally served during the clinic session should be taken into account. In addition, interpretation of the output should be done in conjunction with the clinic personnel who worked during the clinic session that was studied.

PFA was developed by FPED/CDC as a management tool for use in family planning clinics in the United States and Puerto Rico. During the development phase, over 700 data sets were collected and processed by CDC. An earlier consultation during 1979 in El Salvador was the first use of PFA outside of the United States. Twenty-six data sets were collected, processed, and interpreted during this consultation (see CDC AID/RSSA Trip Report: El Salvador, dated April 9, 1980). During 1981 the technique was introduced in Brazil where the PFA programs were also installed to provide in-country capabilities for processing (see CDC AID/RSSA Trip Reports: Brazil, dated June 26, 1981 and September 16, 1981) and, in 1982, was introduced in Kenya.

B. Centro Materno Infantil y de Planificacion Familiar (CMIPF)

CMIPF is a private, non-profit organization which provides maternal and infant care and family planning services to the women in the Ciudad Juarez, Mexico area. It operates a community-based distribution (CBD) program as well as a clinical program.

The CBD program has about 200 health promoters in the area who distribute oral contraceptives, condoms, and foam to neighborhood women and refer pregnant women into the clinics for prenatal care. The health promoters may sell the

pills at 5 pesos (\$.20 at the time of first visit) per cycle and retain the charge. In addition, promoters receive a small monthly payment when their number of active users served is more than 20.

The agency also has three clinics. Two of these clinics are satellite clinics staffed by one physician and a general-purpose assistant. These clinics usually serve only 15 or 20 patients per day. The third clinic (Clinica #2) is a large clinic serving approximately 85 outpatients per day. The clinic also has a small (20-bed) inpatient obstetrics ward and an operating room where several tubal sterilizations--usually postpartum--are performed each day.

IV. COLLECTION OF DATA SETS

Spanish-language data collection forms previously used in El Salvador and Puerto Rico were reviewed with CMIPF staff and found to be acceptable. Because the clinic was integrated and the agency wished to differentiate between maternal and pediatric visits, the coding system was modified somewhat.

The satellite clinics had low patient loads and simple patient flow, so we decided not to study these clinics. In the large clinic (Clinica #2) both the outpatient activities and surgical sterilization activities were studied. The first PFA study of the outpatient clinic was conducted on January 13. However, due to a cold front with record-setting low temperatures and sleet, a relatively low number of patients (47) were served so the value of this study was limited. On Monday, January 18, another study was conducted. Monday is normally the busiest day of the week, so a relatively busy session (85 patients) was studied. Also, on January 18, a study was conducted on surgical activities (4 tubal sterilizations).

The data were keypunched and processed at CDC, and multiple copies of both the graphs and statistics were prepared for discussion with CMIFP personnel.

V. FINDINGS AND RECOMMENDATIONS

The first study (January 13) yielded little useful information because of the very light patient load. However, it did demonstrate under-utilization of staff in such a situation.

The study of the surgery activities documented that minilap sterilizations were done relatively quickly--4 operations were performed between 11:17 a.m. and 12:00 noon; the surgeon required an average of 8 minutes per procedure. Information of this type can be used for scheduling of surgery patients.

The majority of the recommendations came from the January 18 study of the outpatient activities. A copy of the statistical output from this study is attached as Appendix B.

Findings and recommendations specifically discussed with clinic staff are as follows:

- (1) The clinics, and also the health promoters (promotoras), working in the CBD program distribute pills one cycle at a time. This is less of an inconvenience to women who receive their pills from a promotora.

However, the distance of a woman's residence from the clinic, a short-term visit away from the city, or an illness may delay the resupply of a woman, resulting in discontinuation of use of the pill and exposure to an unwanted pregnancy.

CDC physicians and logistics experts recommend that after the first month of pill use patients be given more than one cycle of pills. Most side-effects will manifest themselves within 1 month and at the 1-month followup visit. If there are no problems, it is recommended that the patient be given at least a 3-month supply, and perhaps a 6-month supply. "Contraceptive Technology"* recommends only annual visits for "satisfied, uncomplicated, young, pill patients." Less visits for routine pill refills will save time of clinic staff, health promoters, and patients.

- (2) The current method used in the clinic for processing lab work on new patients requires that they visit the clinic one day for lab work and another day for a physical exam. On the day that the patient has her lab work done, she is told to arrive at 9:00 a.m. The lab technician takes samples from all the patients (for example, eight patients on January 18) and then spends the rest of her 4 hours in the clinic performing the required tests. The patient is told to return another day to see the physician. The obvious disadvantage of this system is the inconvenience of this extra visit for the patient.

If, for example, patients were appointed every 30 minutes, the technician would have 20 to 25 minutes between each patient to process each patient's specimen individually. The patient could then be served by the physician during the same visit.

- (3) During the clinic of January 18, 1982, many patients were taken out of turn by the physicians, and there is no evidence in the data which suggests that patients needed to be assigned to a specific physician.

A system should be devised to assure that patients are taken in order of their arrival. A simple method would be to attach a card with a sequence number to each patient's chart, and display the charts such that the numbers are visible, and have the physicians select the lowest number.

- (4) The major problem which appeared in the clinic of January 18, 1982, was that the physicians did not begin serving patients until after 10:00 a.m. This resulted in a backlog of patients so that the patients who saw a physician had waits of over 2 hours and total time in the clinic up to 4 hours. The reason for the delay in getting started was that the physicians were engaged in serving patients hospitalized in the clinic for deliveries. Although the physicians will need to decide how to handle this problem based on their own knowledge and practice, two ideas were suggested for consideration:

*Hatcher RA, GK Stewart, F Stewart et al. Contraceptive Technology, 1980-1981, 10th Rev. Ed., Irvington Publishers, Inc., 1980, p. 39.

- (a) The physicians could stagger their "rounds" time with hospitalized patients so that after 9:00 a.m. there would always be at least one physician in the outpatient clinic to serve patients; or
- (b) All physicians could make rounds from 8:00 till 9:00, then two physicians could work in the outpatient clinic for the rest of the day while one physician would remain in the inpatient section to serve these patients and assist in surgery. These duties could be rotated among the physicians.

Recommendations 2, 3, and 4, which relate directly to patient flow in the clinics, were simulated using computer programs developed at CDC. These simulation programs allow PFA data to be manipulated to show the effects of possible operational changes in the clinic. Both staffing patterns in Recommendation 4 were tested and found to be roughly equivalent in their effects. As an example of the possible improvement with staffing pattern "b," the average wait for a physician contact decreased from 110 minutes to 19 minutes (see Table 1). In addition, the eight patients in the simulated clinics receiving only laboratory services also saw a physician.

Table 1
Selected Statistics Original PFA Dates
and Computer Simulations, Clinica No. 2, January 18, 1982

	<u>Original Data</u>	<u>Simulation Staffing (a)</u>	<u>Simulation Staffing (b)</u>	<u>Percent Change*</u>
Average wait before physician (min.)	110	29	19	-82.7
Total time in clinic, all patients (min.)	103	41	31	-67.9
Number of patients	85	85	85	-
Number of patients served by physicians	71	79	79	-11.3

*Simulation of staffing pattern (b) is compared with original data.

The simulation programs produce the same outputs as the basic PFA programs, so the effect of operational changes can be dramatically demonstrated with side-by-side comparisons of real data and simulations as was done with CMIPF staff.

VI. DISCUSSION OF RECOMMENDATIONS

On March 17, a meeting was held with the administrative staff and the medical staff to discuss the results and recommendations. Many were surprised at the length of time that patients actually waited in the clinic.

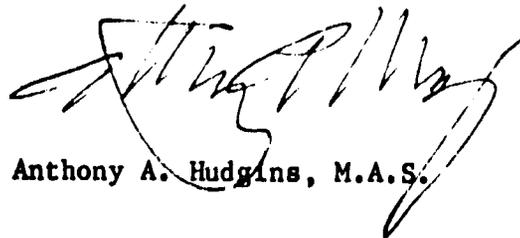
Recommendation #1, regarding the number of cycles to distribute at each visit, was accepted without protest. The medical staff agreed to the distribution of three cycles at all visits after the first month of satisfactory pill use.

Recommendations #3 and #4 were accepted after much positive discussion, and the physicians began planning how to arrange their schedules to result in staffing pattern "b" (two physicians in the clinic beginning at 9:00 a.m.).

Recommendation #2, regarding giving patients a physical exam on the same day as their laboratory services, required additional discussions. Some of the laboratory tests on standing orders required too much time to be done individually, rather than in batches. However, in discussions between the laboratory technician and a representative of the medical staff, it was concluded that only simple tests needed to be run before the physical exam. More complicated tests could be batched and done later in the day. The results would then be filed in the patients' charts for future visits.

VII. FUTURE ACTIVITIES

CMIPF staff are very eager to do a followup study after changes have been implemented so that the effect of changes can be objectively measured. They have been given the proper forms, and data processing will be done by CDC. The agency also expressed interest in assisting other agencies in Mexico in doing PFA studies.



Anthony A. Hudgins, M.A.S.

APPENDIX A

PFA FORMS

**ANALISIS DE FLUJO DE PACIENTES
REGISTRO DE CLINICA**

1. UBICACION DEL ESTABLECIMIENTO DE SALUD

Pais..... (Código)

 (1-2)

Región de Salud..... (Código)

 (3-5)

Establecimiento..... (Código)

 (6-7)

2. ESTUDIO NUMERO.....

--

 (8)

3. TIPO DE ESTABLECIMIENTO.....(Código)

--	--	--	--	--	--

 (9-14)

4. FECHA

Mes.....

 (15-16)

Día.....

 (17-18)

Ano.....

 (19-20)

5. LAS HORAS REGULARES DE ADMISION DE PACIENTES

Comenzando a..... Hora:

 Min.:

 A/P:

 (21-25)

Terminando a..... Hora:

 Min.:

 A/P:

 (26-30)

6. NUMERO DE PACIENTES CITADOS.....

--	--	--

 (31-33)

7. ANOTE AQUI LA HORA MAS TEMPRANA DE LOS SIGUIENTES DATOS (VEASE CASILLAS 21-25 DE (ESTE FORMULARIO) CASILLAS 12-15 EN EL (Registro de Personal) CASILLAS 13-16 EN EL (Registro de Pacientes).

Hora:

 Min.:

 A/P:

 (34-38)

8. LA HORA MAS TARDIA (VEASE CASILLAS 26-30 DE ESTE FORMULARIO Y CASILLA 48-51 EN EL REGISTRO DE PERSONAL)

Hora:

 Min.:

 A/P:

 (39-43)

9. ESTACIONES PROGRAMADAS EN LA CLINICA

Número de estaciones exigidas a todos los pacientes

Tipo de Visita

Inscripción

Reabastecimiento.....

R	I	H	A	G	E	S	O	D

 (80)

**ANALISIS DE FLUJO DE PACIENTES
REGISTRO DE PERSONAL**

- PREFIX: (1-8)
- | | |
|--|--|
| | |
| | |
| | |
1. LETRA PERSONAL DE IDENTIFICACION (Ver Formulario 5).....(Código)
 2. PROFESION (Ver Formulario 5).....(Código)
 3. TAREA ASIGNADA EN LA CLINICA (Ver Formulario 5).....(Código)
 4. DESCRIPCION DE LA TAREA _____

- | Hora | | Min. | |
|------|--|------|--|
| | | | |
5. LA HORA EN QUE ESTA LISTO PARA ATENDER PACIENTES (12-15)
- | Hora | | Min. | |
|------|--|------|--|
| | | | |
| | | | |
| | | | |
| | | | |
6. TIEMPO FUERA DE LA SESION: PERIODOS DE TIEMPO, QUE EXCEDEN A 15 MINUTOS EN LOS QUE INTERUMPA SU TRABAJO PARA: ALMUERZO U OTRAS ACTIVIDADES NO RELACIONADAS DIRECTAMENTE CON SU TRABAJO

de			a			(16-23)
de			a			(24-31)
de			a			(32-39)
de			a			(40-47)
 7. LA HORA EN QUE SE CONCLUYE ESTA TAREA..... (48-51)

8. SI UD. TIENE QUE VIAJAR PARA TRABAJAR EN ESTA CONSULTA, RECIBE REEMBOLSO POR LOS GASTOS DE VIAJE:

						(52-54)
						(55-56)
						(57-59)

 - A. Kilómetros viajados (ida y vuelta).....
 - B. Reembolso por kilómetro (redondeado al próximo número entero)
 - C. Tiempo de ida y vuelta (en minutos).....
9. LA FUENTE DE FONDOS PARA SU SUELDO.....(Código) (60)

- | Colones y Centavos | | | | | | Por |
|--------------------|--|--|--|--|--|-----|
| | | | | | | |
| | | | | | | |
10. SUELDO COMPLETO..... (61-65)
 - MAS..... (66-73)
 11. NUMERO DE DIAS DE AUSENCIA POR ENFERMEDAD, VACACIONES Y DIAS FERIADOS..... (74-75)
 12. QUE PORCENTAJE DE SU SUELDO RECIBE COMO AGUINALDO..... (76-77)
 13. NUMERO DE HORAS QUE TRABAJA A LA SEMANA (Cifra aproximada)... (78-79)
- | | |
|----------|--|
| 2 | |
|----------|--|
- (80)

**ANALISIS DE FLUJO DE PACIENTES
REGISTRO DE PACIENTES**

PREFIX: (1-8)

8. PACIENTE NUMERO		(9-10)
NUMERO DE TARJETA	3	(11)

	Código		Hora	Min.		Hora	Min.	
Decimo cuarto contacto.....		de			a			(12-20)
Decimo quinto contacto		de			a			(21-29)
Decimo sexto contacto		de			a			(30-38)
Decimo septimo contacto		de			a			(39-47)
Decimo octavo contacto		de			a			(48-56)
Decimo noveno contacto		de			a			(57-65)
Veinteavo contacto.....		de			a			(66-74)
							3	(80)

PREFIX: (1-8)

9. PACIENTE NUMERO		(9-10)
NUMERO DE TARJETA	4	(11)

	Código		Hora	Min.		Hora	Min.	
Veinte y un contacto.....		de			a			(12-20)
Veinte y dos contacto.....		de			a			(21-29)
Veinte y tres contacto.....		de			a			(30-38)
Veinte y cuatro contacto.....		de			a			(39-47)
Veinte y cinco contacto.....		de			a			(48-56)
Veinte y seis contacto.....		de			a			(57-65)
Veinte y siete contacto.....		de			a			(66-74)
							3	(80)

**ANALISIS DE FLUJO DE PACIENTES
REGISTRO DE PACIENTES**

3 a

	(1-2)	
1. PACIENTE NUMERO (Ver Formulario 4).....	(9-10)	
2. MOTIVO DE CONSULTA(Código)	(11)	
3. METODO DE PLANIFICACION FAMILIAR(Código)	(12)	
	Hora	Min.
4. HORA DE LLEGADA AL ESTABLECIMIENTO DE SALUD	<input type="text"/>	<input type="text"/>
	:	:
5. HORA DE CITA (de acuerdo con el registro de la clinica y/o tarjeta de cita).....	<input type="text"/>	<input type="text"/>
	:	:
6. TIEMPO DE SERVICIO AL PACIENTE:	Inicio del Servicio	
	Servicio Completado	
	CODIGO PERSONAL	
		Hora Min.
Primer contacto.....	de	a
	<input type="text"/>	<input type="text"/>
	:	:
Segundo contacto.....	de	a
	<input type="text"/>	<input type="text"/>
	:	:
Tercer contacto	de	a
	<input type="text"/>	<input type="text"/>
	:	:
Cuarto contacto	de	a
	<input type="text"/>	<input type="text"/>
	:	:
Quinto contacto	de	a
	<input type="text"/>	<input type="text"/>
	:	:
Sexto contacto	de	a
	<input type="text"/>	<input type="text"/>
	:	:
	3	
	(80)	

	PREFIX: (1-8)	
7. PACIENTE NUMERO	(9-10)	
NUMERO DE TARJETA.....	(11)	
	Código	Hora min.
		HORA min.
Septimo contacto.....	de	a
	<input type="text"/>	<input type="text"/>
	:	:
Octavo contacto	de	a
	<input type="text"/>	<input type="text"/>
	:	:
Noveno contacto	de	a
	<input type="text"/>	<input type="text"/>
	:	:
Décimo contacto	de	a
	<input type="text"/>	<input type="text"/>
	:	:
Undécimo contacto.....	de	a
	<input type="text"/>	<input type="text"/>
	:	:
Duodécimo contacto	de	a
	<input type="text"/>	<input type="text"/>
	:	:
Décimo tercero contacto.....	de	a
	<input type="text"/>	<input type="text"/>
	:	:
	3	
	(80)	

HOJA DE REGISTRO DE PACIENTES

Número de página: _____

ESTABLECIMIENTO _____ FECHA: _____ HORA: _____

PACIENTE NUMERO	N O M B R E	HORA DE	
		Llegada	Cita
1			
2			
3			
4			
5			
6			
7			
8			
9			
0			
1			
2			
3			
4			
5			
6			
7			
8			
9			
0			

APPENDIX B

**STATISTICAL REPORT OF PFA STUDY
(COSTS IN PESOS)**

PATIENT FLOW ANALYSIS

DATA SET CODE: RM-001-22-1

STATE CODE RM - COUNTY CODE 001

BUILDING CODE 22 - STUDY NO. 1

JAN 18, 1982 - 08:00 A.M. - 04:00 P.M.

CLINIC TYPE: GENERAL, FULL SERVICE, INTEGRATED CLINIC CONDUCTED IN (IN)
URBAN PUBLIC CLINIC DURING REGULAR BUSINESS HOURS

INTRODUCTION

0 APPOINTMENTS WERE MADE (SEE TABLE 1)
 0 PERCENT OF APPOINTMENTS WERE KEPT
 67 FAMILY PLANNING PATIENTS WERE SERVED (SEE TABLE 3)
 18 NON-FAMILY PLANNING PATIENTS WERE SERVED
 0 PATIENTS REGISTERED BUT RECEIVED NO SERVICES (SEE TABLE 2)
 1 SCHEDULED STATION STOPS WERE MISSED (SEE TABLE 4, ITEM 11)
 0 UNSCHEDULED STATION STOPS WERE MADE (SEE TABLE 4, ITEM 12)
 8 PERSONNEL WERE SCHEDULED TO WORK IN THIS CLINIC (SEE TABLE 4, ITEM 1)
 8 PERSONNEL WORKED IN THIS CLINIC (SEE TABLE 4, ITEM 2)
 8:47 WAS THE DURATION OF THIS CLINIC - FIRST TO LAST PATIENT (HOURS:MINUTES)

95%
CONFIDENCE
INTERVAL

PATIENT ORIENTED DATA

8 - 10 9 PERCENT OF THE AVERAGE PATIENT'S TIME IN THE CLINIC WAS SPENT IN CONTACT WITH CLINIC PERSONNEL (SEE TABLE 2)
 8 - 10 9 MINUTES WERE SPENT BY THE AVERAGE PATIENT IN CONTACT WITH CLINIC PERSONNEL (SEE TABLE 2)
 90 - 117 103 MINUTES WERE SPENT BY THE AVERAGE PATIENT IN THE CLINIC (SEE TABLE 2)

PERSONNEL ORIENTED DATA

1 - 46 23 PERCENT OF PERSONNEL TIME AVAILABLE WAS SPENT SERVING PATIENTS (SEE TABLE 4, ITEM 7)
 8 MINUTES OF PERSONNEL TIME WERE SPENT WITH THE AVERAGE PATIENT (SEE TABLE 4, ITEMS 5 AND 8)
 38 MINUTES OF PERSONNEL TIME WERE AVAILABLE PER PATIENT SERVED (SEE TABLE 4, ITEMS 3 AND 8)
 17 PERCENT OF AVAILABLE PERSONNEL TIME WAS CLERICAL (SEE TABLE 4, ITEM 4)
 12 PERCENT OF PERSONNEL TIME SPENT WITH PATIENTS WAS CLERICAL (SEE TABLE 4, ITEM 6)

COST DATA

\$ 23.88 WAS THE AVERAGE PERSONNEL COST FOR AN INITIAL VISIT (SEE TABLE 3)
 45.10 WAS THE AVERAGE PERSONNEL COST FOR AN ANNUAL VISIT (SEE TABLE 3)
 0.0 WAS THE AVERAGE PERSONNEL COST FOR A MEDICAL PROBLEM VISIT (SEE TABLE 3)
 97.62 WAS THE AVERAGE PERSONNEL COST FOR A RESUPPLY VISIT (SEE TABLE 3)
 43.53 WAS THE AVERAGE PERSONNEL COST FOR OTHER TYPES OF FAMILY PLANNING VISITS (SEE TABLE 3)
 41.45 WAS THE AVERAGE PERSONNEL COST FOR NON-FAMILY PLANNING VISITS
 0.0 WAS THE PERSONNEL COST TO BUDGET CODE A
 0.0 WAS THE PERSONNEL COST TO BUDGET CODE B
 0.0 WAS THE PERSONNEL COST TO BUDGET CODE C
 0.0 WAS THE PERSONNEL COST TO BUDGET CODE D
 0.0 WAS THE PERSONNEL COST TO BUDGET CODE E
 0.0 WAS THE PERSONNEL COST TO BUDGET CODE F
 3919.97 WAS THE TOTAL PERSONNEL COST FOR THIS CLINIC
 0.0 WAS THE TOTAL TRAVEL COST FOR THIS CLINIC

DEFINITIONS:

95% CONFIDENCE INTERVAL: A NUMERICAL RANGE COMPUTED FROM THE DATA SO THAT, IF YOU REPEAT THE STUDY UNDER THE SAME CONDITIONS,
 95% OF THE TIME THE INTERVAL YOU CALCULATE WILL CONTAIN THE TRUE MEAN

TABLE 1 PATIENT TIME OF ARRIVAL IN THE CLINIC RELATIVE TO APPOINTMENT TIME (MINUTES)

	EARLY		ON TIME	LATE		PATIENTS WITH APPOINTMENTS
	> 45	16-45	+/- 15	16-45	> 45	
FAMILY PLANNING NO. OF PATIENTS	0	0	0	0	0	0
PERCENT OF TOTAL	0%	0%	0%	0%	0%	100%
NON-FAMILY PLANNING NO. OF PATIENTS	0	0	0	0	0	0
PERCENT OF TOTAL	0%	0%	0%	0%	0%	100%

TABLE 2 AVERAGE PATIENT TIME IN THE CLINIC (MINUTES) PATIENT TIME RECEIVING SERVICES (MINUTES) PROPORTION OF PATIENT TIME RECEIVING SERVICES PERCENT RECEIVING SERVICES

VISIT TYPE	AVERAGE PATIENT TIME IN THE CLINIC (MINUTES)				PATIENT TIME RECEIVING SERVICES (MINUTES)				PROPORTION OF PATIENT TIME RECEIVING SERVICES PERCENT RECEIVING SERVICES	
	MEAN	95 % CONF. INTERVAL	RANGE		MEAN	95 % CONF. INTERVAL	RANGE		PERCENT RECEIVING SERVICES	95 % CONF. INTERVAL
			MAX	MIN			MAX	MIN		
INITIAL	122	*** - ***	122	122	8	*** - ***	8	8	7%	** - **
ANNUAL	125	53 - 196	189	94	11	4 - 18	17	6	9%	1 - 18
MEDICAL	0	*** - ***	0	0	0	*** - ***	0	0	0%	** - **
RESUPPLY	23	4 - 41	36	1	3	1 - 4	5	1	11%	2 - 21
OTHER	116	101 - 131	225	4	10	9 - 12	31	3	9%	7 - 10
TOTAL FP	110	93 - 127	225	1	10	9 - 11	31	1	9%	7 - 10
NON-FP	80	46 - 113	183	3	8	6 - 9	11	3	10%	6 - 13

TABLE 3 NUMBER OF PATIENTS / COST PER PATIENT SERVED BY VISIT TYPE AND FAMILY PLANNING METHOD

VISIT TYPE	METHOD									PERCENT PTS. BY VIS. TP	PATIENTS WITH APPT BY VIS TP
	PILL NO/ \$	IUD NO/ \$	FOAM/CON NO/ \$	DIAPH. NO/ \$	OTHER NO/ \$	NONE NO/ \$	UNKNOWN NO/ \$	ALL METH NO/ \$			
INITIAL	0/ 0.0	1/23.88	0/ 0.0	0/ 0.0	0/ 0.0	0/ 0.0	0/ 0.0	1/23.88	1%	0	
ANNUAL	0/ 0.0	0/ 0.0	0/ 0.0	0/ 0.0	0/ 0.0	4/45.10	0/ 0.0	4/45.10	6%	0	
MEDICAL	0/ 0.0	0/ 0.0	0/ 0.0	0/ 0.0	0/ 0.0	0/ 0.0	0/ 0.0	0/ 0.0	0%	0	
RESUPPLY	4/*****	0/ 0.0	1/ 9.34	0/ 0.0	0/ 0.0	0/ 0.0	0/ 0.0	5/97.62	7%	0	
OTHER	0/ 0.0	0/ 0.0	0/ 0.0	0/ 0.0	0/ 0.0	57/43.53	0/ 0.0	57/43.53	85%	0	
TOTAL FP PATIENTS	4	1	1	0	0	61	0	67		0	
PERCENT BY METHOD	6%	1%	1%	0%	0%	91%	0%	100%	100%		

TABLE 4 - PERSONNEL STATISTICS BY TASK

	TASK											TOTAL
	RECEP	LAB WOKK	MED HIST	ASST CLIN	CLIN	EDUC	SOC WOKK	OTHER HLTH	OTHER CLERK	PHYS.	ADMIN	
1. NO. OF PERSONNEL SCHEDULED	2	1	0	0	0	0	1	1	0	3	0	8
2. NO. OF PERSONNEL WHO WORKED	2	1	0	0	0	0	1	1	0	3	0	8
3. PERSONNEL MINUTES AVAILABLE	545	240	0	0	0	0	480	480	0	1445	0	3190
4. PERCENT OF TOTAL PERSONNEL MINUTES AVAILABLE	17 %	8 %	0 %	0 %	0 %	0 %	15 %	15 %	0 %	45 %	0 %	100 %
5. PERSONNEL MINUTES IN PATIENT CONTACT	88	39	0	0	0	0	8	0	0	586	0	721
6. PERCENT OF TOTAL TIME IN PATIENT CONTACT	12 %	5 %	0 %	0 %	0 %	0 %	1 %	0 %	0 %	81 %	0 %	100 %
7. PERCENT OF AVAILABLE TIME IN PAT. CONTACT (#5/#3)	16 %	16 %	0 %	0 %	0 %	0 %	2 %	0 %	0 %	41 %	0 %	23 %
8. NO. OF PATIENTS SERVED	85	0	0	0	0	0	4	0	0	71	0	85
9. AVERAGE WAITING TIME PRECEDING THIS STATION	1	11	0	0	0	0	12	0	0	110	0	94
10. 95 % CONF. INTERVAL	1- 1	4- 19	***-***	***-***	***-***	***-***	1- 25	***-***	***-***	97-122	***-***	81-107
11. SCHEDULED STOPS MISSED BY VISIT TYPE												
INITIAL	0	0	0	0	0	0	0	0	0	--	--	0
ANNUAL	0	0	0	0	0	0	0	0	0	--	--	0
MEDICAL	0	0	0	0	0	0	0	0	0	--	--	0
RESUPPLY	2	0	0	0	0	0	1	0	0	--	--	1
12. UNSCHEDULED STOPS MADE BY VISIT TYPE												
INITIAL	0	0	0	0	0	0	0	0	0	--	--	0
ANNUAL	0	0	0	0	0	0	0	0	0	--	--	0
MEDICAL	0	0	0	0	0	0	0	0	0	--	--	0
RESUPPLY	0	0	0	0	0	0	0	0	0	--	--	0
13. NUMBER OF STOPS REQUIRED BY VISIT TYPE												
INITIAL	1	0	0	0	1	0	0	0	0	--	--	2
ANNUAL	1	0	0	0	1	0	0	0	0	--	--	2
MEDICAL	1	0	0	0	1	0	0	0	0	--	--	2
RESUPPLY	1	0	0	0	0	0	1	0	0	--	--	2

TABLE 5 -- TIME (MINUTES) AND COST PER PATIENT SERVED BY TASK AND VISIT TYPE

TASK	VISIT TYPE	PAT. SERVICE MINUTES		95 % CNF. INTERVAL	COST	
		TOTAL	MEAN		TOTAL	MEAN PER PATIENT
RECEPTIONIST	INITIAL	1	1	*** - ***	4.32	4.32
	ANNUAL	5	1	1 - 2	21.56	5.39
	MEDICAL	0	0	*** - ***	0.0	0.0
	RESUPPLY	5	1	1 - 1	57.49	11.50
	CTHER	62	1	1 - 1	267.54	4.69
	TOTAL FP	73	1	1 - 1	350.92	5.24
	NON-FP	22	1	1 - 1	94.93	5.27
	DIST COST				0.0	0.0
LAB WORK	INITIAL	0	0	*** - ***	0.0	0.0
	ANNUAL	0	0	*** - ***	0.0	0.0
	MEDICAL	0	0	*** - ***	0.0	0.0
	RESUPPLY	0	0	*** - ***	0.0	0.0
	CTHER	2	2	*** - ***	13.24	13.24
	TOTAL FP	2	2	*** - ***	13.24	13.24
	NON-FP	37	5	3 - 8	244.96	34.99
	DIST COST				0.0	0.0
SOCIAL SERVICES	INITIAL	0	0	*** - ***	0.0	0.0
	ANNUAL	0	0	*** - ***	0.0	0.0
	MEDICAL	0	0	*** - ***	0.0	0.0
	RESUPPLY	8	2	1 - 4	405.49	*****
	CTHER	0	0	*** - ***	0.0	0.0
	TOTAL FP	8	2	1 - 4	405.49	*****
	NON-FP	0	0	*** - ***	0.0	0.0
	DIST COST				0.0	0.0
OTHER HEALTH	INITIAL	0	0	*** - ***	0.0	0.0
	ANNUAL	0	0	*** - ***	0.0	0.0
	MEDICAL	0	0	*** - ***	0.0	0.0
	RESUPPLY	0	0	*** - ***	0.0	0.0
	CTHER	0	0	*** - ***	0.0	0.0
	TOTAL FP	0	0	*** - ***	0.0	0.0
	NON-FP	0	0	*** - ***	0.0	0.0
	DIST COST				426.83	5.02
PHYSICIAN	INITIAL	7	7	*** - ***	14.55	14.55
	ANNUAL	40	10	4 - 16	138.75	34.69
	MEDICAL	0	0	*** - ***	0.0	0.0
	RESUPPLY	0	0	*** - ***	0.0	0.0
	CTHER	528	9	8 - 11	1914.39	34.19
	TOTAL FP	575	9	8 - 11	2067.69	33.90
	NON-FP	78	8	7 - 9	315.90	31.59
	DIST COST				0.0	0.0

TABLE 5 - TIME (MINUTES) AND COST PER PATIENT SERVED BY TASK AND VISIT TYPE

TASK	VISIT TYPE	PAT. SERVICE MINUTES		95 % CNF. INTERVAL	COST	
		TOTAL	MEAN		TOTAL	MEAN PER PATIENT
ALL TASKS	INITIAL	9	8	*** - ***	18.86	18.86
	ANNUAL	45	11	4 - 18	160.32	40.08
	MEDICAL	0	0	*** - ***	0.0	0.0
	RESUPPLY	13	3	1 - 4	462.98	92.60
	OTHER	592	10	9 - 12	2195.18	38.51
	TOTAL FP	658	10	9 - 11	2837.34	42.35
	NON-FP	137	8	6 - 9	655.79	36.43
	DIST COST				426.83	5.02

TABLE 6 - INDIVIDUAL PERSONNEL DATA

PERSONNEL CODE	OFFICIAL DESIGNATION CODE	TASK ASSIGNED CODE	COST RATE \$/MIN.	NO. OF PATIENTS SEEN	TIME WITH PATIENTS (MINUTES)				TOTAL TIME IN CLINIC (MINUTES)	PERCENT OF TIME WITH PATIENTS
					MEAN	MAX.	MIN.	TOTAL		
A	D	P	1.659	9	8	16	5	72	480	15 %
B	D	P	1.645	11	9	15	5	180	490	37 %
D	C	R	0.818	4	1	1	1	3	65	5 %
H	S	S	0.845	4	2	4	1	8	480	2 %
M	C	R	0.818	81	1	4	1	85	480	18 %
P	L	U	0.839	0	0	0	**	0	480	0 %
R	D	P	1.645	41	8	30	2	334	475	70 %
V	T	L	1.076	8	5	10	2	39	240	16 %
AVERAGE			1.229							