



**Memorandum**

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(CHPE)

Subject Foreign Trip Report (AID/RSSA): El Salvador-Consultation on Logistics  
Management, November 29-December 10, 1982

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**SUMMARY**

A visit was made to El Salvador on November 29 through December 10, 1982, to provide technical assistance to the Ministry of Health in logistics management. During this visit, the majority of the time was spent investigating imbalances of contraceptive supplies at the national level and estimating future needs rather than assessing the infrastructure to distribute supplies. However, during visits to the field to check the validity of assumptions, several deficiencies were noted, and some recommendations related to procedures were made.

The major problem in the country is a great excess of Noriday (at current usage levels). In addition to an unknown but probably large inventory in the field, the national warehouse for the Ministry of Health (MOH) has a 1.5 year supply; the Salvadoran Demographic Association (ADS) has an excess over their own needs amounting to 6 years MOH usage. There appears to be reluctance to use the product among clinicians due to vague complaints of side effects, and due to the fact that some of the stock is getting relatively old (1975 and 1976 manufacture dates).

Needs for other types of contraceptives were estimated, and methods to obtain better usage data for projections were recommended. Also during this visit, ongoing projects that have had technical assistance from CDC--the IUD followup study and the Patient Flow Analysis (PFA) project--were discussed. A detailed preliminary report for immediate action was left with AID/San Salvador and sent to USAID/Washington.

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

At the request of USAID/El Salvador and AID/S&T/POP/FPSD, Anthony A. Hudgins traveled to El Salvador on November 29-December 10, 1982, to provide technical assistance to the Ministry of Health (MOH) of El Salvador in logistics management. This consultation was provided by Anthony A. Hudgins of the Program Evaluation Branch, DRH/CHPE/CDC. This travel was in accordance with the Resource Support Services Agreement (RSSA) between the Office of Population, AID and CDC/CHPE/DRH.

#### II. PRINCIPAL CONTACTS

##### A. USAID/El Salvador

1. John Massey, Population Officer
2. Raul G. Toledo Salvo, Medical Consultant

##### B. Ministry of Health (MOH)

1. Dr. Jose Montes Figueroa, Chief, Maternal Health and Family Planning
2. Dr. Jorge Cruz, Medical Consultant
3. Dr. Max Molina, Regional Medical Director, Santa Tecla
4. Dr. Jaime Napoleon Carcamo, Regional Medical Director, Santa Ana

##### C. Salvadoran Demographic Association (ADS)

1. David Araya, Director of Research and Evaluation

##### D. PanAmerican Health Organization (PAHO)

1. Horacio F. Gutierrez, Sociologist-Demographer Consultant

#### III. LOGISTICS SYSTEM

##### A. General

The logistics system of the MOH distributes supplies, including contraceptives through a system of five regional warehouses to approximately 260 clinics. Procedures have been developed for movement of supplies, and Inventory Control Cards (ICC's) are relatively well-maintained at Central and Regional levels. During this visit, I concentrated on overriding concerns of imbalances of supplies at the national level, and the need to plan for future commodity requirements rather than concentrating on internal operations of the logistics system. Visits to the national warehouse, three regional warehouses (Central in San Salvador; Para central in Santa Tecla; and Western in Santa Ana), and several clinics were carried out to reinforce the validity of planning assumptions. Several deficiencies were noted:

1. Although the National Warehouse compound has one new, very well-maintained warehouse, most of the contraceptives were stored in buildings subject to water leakage. In fact, several boxes of condoms had been water-damaged.
2. The warehouse in Santa Ana had a stockout of condoms, which were on order. However, it should be noted that the clinics visited in the area appeared to have adequate stocks.
3. Minor differences appeared between inventory and the Inventory Control Cards (ICC's). However, the visit was just prior to the semiannual inventory with adjustments resulting to the ICC's. The only major discrepancy was at the National Warehouse, where 23,400 cycles of Norinyl 1+50 had been sent back from a Regional Warehouse as being "too old" to use. This inflow of stock had not been recorded in the ICC.

Tables 1 and 2 describe activity at the Central Warehouse during the first semester of 1982 and the inventory in December 1982, respectively.

Table 1

Activity at Central Warehouse,  
First Semester 1982

<u>Commodity</u>	<u>Beginning Inventory</u>	<u>Receipts</u>	<u>Distribution to Regional Warehouses</u>	<u>Distribution to Others*</u>	<u>Ending Inventory</u>
Neogynon	113,450	0	55,500	17,700	40,250
Ovral 28	64,200	0	32,550	7,500	24,150
Norinyl 1+50	255,294	0	3,000	14,700	237,594
Lippes A	318	0	100	74	144
Lippes B	154	0	100	40	14
Copper T	3,338	0	2,256	1,082	0
Condoms	342,300	720,000	160,800	638,600	244,800

\*Principally includes hospitals and the military.

Table 2

Inventory of Contraceptives at the Central Warehouse  
December 1, 1982

Neogynon Orals	12,765 cycles
Norinyl 1+50 Orals	234,600 cycles
Lippes IUD	0 units
Copper T IUD	205 units
Condoms	821,952 units

B. The Oversupply of Noriday

1. **Background:** Over the past 5 years large amounts of Noriday/Norinyl 1+50 oral contraceptives have been supplied to the MOH and to the Salvadoran Demographic Association by AID. At the same time, other donors have supplied other types of oral contraceptives, notably Ovrал and Neogynon. The MOH has offered all the types of orals to clinicians and users, and it appears that a preference for Ovrал and Neogynon has developed, leaving a large, aging stock of Noriday.
  
2. **Estimates of Use:** Due to the existence of large stocks of Noriday at the national level, quantities have been "pushed" out to the regional and clinic levels in excess of demand. For example, the Santa Ana Hospital has roughly 9 years supply of Noriday at current estimated usage. Therefore, distribution figures from the national level cannot be used to estimate demand. Since there is a lack of good data, a relatively indirect method was used to estimate current demand. Due to the lack of excessive supplies of Ovrал and Neogynon in the regional warehouses or clinics, first semester 1982 distribution from the national level of Ovrал and Neogynon was assumed to represent demand. This demand was translated into couple-years of protection (CYP) and subtracted from a 1982 active user estimate prepared by Horacio Gutierrez, Sociologist-Demographer consultant from PAHO. (This estimate was prepared using New User Figures of the MOH program and estimated continuation rates.) The calculations are shown below:

Table 3

Calculation of Demand for Noriday Using Indirect Method

	<u>Neogynon</u>	<u>Ovrал</u>
First Semester '82 distribution	73,200	40,050
Annualized distribution	146,400	80,100
Annual use per woman	<u>13</u>	<u>13</u>
Couple-years of protection (CYP)	11,262	6,162

29,509 Active Pill Users, 1982  
 -11,262 Neogynon CYP  
 - 6,162 Ovrал CYP  
12,085 Noriday Users  
 x 13 Cycles Per Year  
 157,105 Cycles Annual Usage

In addition to an unknown but probably high inventory at the clinic and regional level, the national warehouse has a 1.5 year supply (234,600 cycles), using the above estimate, and the excess supply at the Salvadoran Demographic Association of about 1 million cycles represents more than a 6-year supply.

It should be noted that the use figure was calculated using an indirect method based on many assumptions. However, it is the best that can be done with available data and although it is imprecise, I feel that it is a fair estimate and is consistent with other subjective information obtained during the visit.

3. Reasons affecting a reluctance to use Noriday: At all three of the regional offices visited and at some of the clinics, medical personnel stated Noriday caused more adverse reactions in users than the other types of orals. Dr. Raul G. Toledo (USAID) feels there is some misunderstanding among clinicians concerning the effective strength of the estrogen in Noriday. There was also some refusal to use Noriday that was older than 5 years. In fact, the Eastern Region (Oriente) sent 23,400 cycles of orals with a 1975 manufacture date back to the warehouse as being too old to use.
4. Recommendations Regarding the Noriday Problem:
  - (a) Although Anthony Boni, AID/W/POP/FPSD, took some Noriday of 1976 manufacture to the U.S. for analysis in September 1982. Noriday made in 1975 was encountered in MOH clinics. Some of these pills were retrieved and sent to Anthony Boni (AID/Washington) for analysis.
  - (b) Dr. Raul G. Toledo (USAID) should collaborate with Dr. Montes (MOH) in sending a letter to Regional offices and clinics explaining the results of analysis of older Noriday and explaining the biochemical activity of Noriday, citing appropriate professional journals. This latter explanation should explain why and when side effects, including inter menstrual bleeding, might occur.
  - (c) A study comparing side effects of Noriday with those of other orals should be considered. A possible methodology might be random chart review of users.

C. Needs for Other Oral Contraceptives

The demand for Ovral and Neogynon has been estimated above. Both of these orals have been requested by the MOH from UNFPA and are expected in January-February 1983. The MOH has also ordered Microgynon for lactating women. The figures are as follows:

Table 4

Years Usage On Hand and Ordered,  
Other Oral Contraceptives

<u>Oral</u>	<u>Estimated Annual Usage</u>	<u>On Hand Central Warehouse</u>	<u>Years of Usage On Hand</u>	<u>On Order</u>	<u>Years of Usage Ordered</u>
Neogynon	146,400	12,765	.09	125,000	.85
Ovral	80,100	0	0	125,000	1.56
Microgynon	-	-	-	200,000	-

D. Needs For Condoms

Distribution of condoms from the national warehouse for 1981 and the first three quarters of 1982 were felt to be representative of demand for the following reasons: (1) Distribution was consistent between the 2 years; (2) there was no evidence of excess supplies in the field, and (3) all clinics

visited had supplies. The annualized 1982 figure is slightly less than the 1981 figure (Table 5). However, I feel that this is due to random fluctuations, and that it is reasonably safe to assume that demand will increase 2.5 percent in the first two quarters of 1983, and 5 percent in each of the following 2 years.

Table 5

Condoms Distributed From National Warehouse

<u>1981</u>	<u>1982 (9) Months</u>	<u>1982 Annualized*</u>
1,463,328	1,081,872	1,442,496

\*1982 9-month figure ÷ 3 x 4

The inventory on hand at the national level is 822,000 units. Assuming a need of the following year's usage on June 30 of each year, need figures are as follows (Table 6):

Table 6

Condom Need Estimates

	First Two Quarters 1983	July 83 to Jan. 84	June 84 to July 85
Estimated Demand	740,000	1,560,000	1,640,000
Shipments Needed	1,480,000	1,640,000	1,720,000

E. IUD Needs

During the first two quarters of 1982 there were 3,033 new acceptors of IUD's, which is consistent with previous years' figures. Distribution figures indicate that the Copper T is the preferred IUD. However, some medical professionals prefer the "Lippes Loop." In general, IUD stocks are very low at all levels of the system. The MOH requested 8,000 Cooper T's from AID, which should have already been received. If delivery is further delayed, ADS has agreed to lend or donate Copper T's from their inventory. ADS has more than 6,000 Copper T's, while their current use is only about 700 per year.

If the MOH believes that it is appropriate to continue to provide Lippes IUD's to its users, a request should be made to obtain the devices from UNFPA. They will probably be received in bulk and will need to be packaged and sterilized in-country.

The MOH clinics will probably continue to need 6,000 to 8,000 IUD's per year. The need for Copper T's will depend on whether Lippes IUD's are made available.

(F) Information Flow in the Logistics System

Currently the MOH reports quarterly to USAID on the numbers of contraceptives distributed from the national warehouse. However, this information does not distinguish by brand and is two levels removed from the clinics that actually

issue the supplies. Instead, I recommend that distribution from regional warehouses to clinics, and from the national warehouse directly to hospitals and health centers, by brand name, be reported on a quarterly basis. All the warehouses I visited had this information and indicated that it would be easy to report it quarterly.

Another source of even more direct information on use would be the system for reporting clinic activity. In the new system designed by PAHO consultant, Horacio Gutierrez, a form is included to report contraceptives issued to patients. I suggested that this form be expanded to report issues by brand name. The system will be put in place on January 1.

#### IV. THE IUD COMPARISON STUDY

##### A. Background

In 1978 the MOH began a prospective study to compare two types of IUD's--the Copper T and the Lippes Loop. Information on insertion and follow-up of over 4,000 women has been coded at the MOH and subsequently partially edited at CDC.

##### B. Survey of Women Lost to Followup

Of the 2,100 women without complete followup, 1,214 were sampled--roughly half Copper-T users and half Lippes users. The MOH has contracted with the ADS to interview these women. During this visit, I discussed the questionnaire and survey procedures with ADS personnel.

Of the 1,214 in the sample, 725 had accurate, urban addresses. Due to the security problem in the country, rural women will not be interviewed. Since the plan is to complete 600 surveys, name and address information for 240 women in the sample for whom medical records could not be found will be sent to CDC.

#### V. PATIENT FLOW STUDY

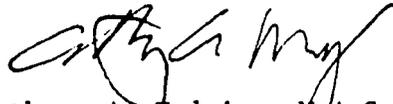
##### A. Background

In 1979, computerized Patient Flow Analysis (PFA) studies were done in 24 MOH clinics. After processing at CDC, the results were discussed with MOH personnel, and general recommendations were developed. The MOH decided to implement the recommendation in a pilot project in the Western Region (Occidental). See trip reports: Huezco, March 25, 1982, and February 18, 1982.

A workshop was held, which included the medical director and nursing director, of each clinic as well as much of the regional office staff. Results of the studies were presented, as well as computer simulations of clinic sessions that theoretically reflect implementation of the recommendations. Small groups then worked through cases and decided how to implement the recommendations in their own clinics.

**B. Status**

Discussions held in the regional office indicated that the recommendations had been implemented in the three hospitals, both health centers, most of the 21 health units, and about 40 percent of the 27 health posts. Although the changes resulted only in partial success, some administrators have decided to apply the recommendations to all the out-patient clinics, not just in family planning clinics. Discussions with clinic personnel yielded the opinion that although implementation of the recommendations was not without problems, the overall effect was positive.

  
Anthony A. Hudgins, M.A.S.