DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service
Centers for Disease Control

Memorandum

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Subject Foreign Trip Report (AID/RSSA): Evaluation of Contraceptive Logistics in Five Family Planning Agencies, Ecuador, January 17-30, 1981.

To William H. Foege, M.D., Director,
Centers for Disease Control
Through: Horace G. Ogden, Director
Center for Health Promotion and Education (CHPE)

SUMMARY

In preparation for AID's resumption of family planning assistance in Ecuador, I conducted an assessment of logistics capabilities in 5 institutions. I visited two private institutions--the Center for Medical Orientation and Family Planning (CEMOPLAF), and the Ecuatorian Family Welfare Association (APROFE)--and three public agencies--the Armed Forces' Department of Preventive Medicine and Family Welfare (FFAA), the Campesino Social Security Division of the Ecuatorian Social Security Institute (IESS/SSC), and the Ministry of Health's Office of Family Health (MOH). With the exception of the MOH, all of these institutions distribute contraceptives from central warehouses directly to clinics.

Even in the accessible locations whose records and inventories I was able to review for the last year, APROFE, FFAA, and MOH clinics all experienced stockouts (zero inventory of some commodity). CEMOPLAF may well have experienced stockouts if unscheduled deliveries had not been made during supervisory visits. IESS/SSC had not experienced any stockouts as far as I could determine, but it currently distributes only one commodity to a very limited number of users.

However, for APROFE, IESS, and CEMOPLAF, the future logistics picture is positive. APROFE's stockouts were primarily the result of delivery delays. Clearance through Ecuatorian customs may continue to be a problem, but ample deliveries scheduled for 1981 should provide adequate reserves once cleared through customs. In addition, the staff seemed eager to implement the suggested guidelines for improving warehousing and distribution.

The supply activities of IESS/SSC have functioned well so far and will probably continue to do so with the expansion of contraceptive services. CEMOPLAF has an adequate inventory and will probably require minimal further input in the form of a brief followup visit in mid-1981 by CDC consultants to help organize their new warehouse and to conduct training for the new clinic personnel in logistics procedures.

Stockouts at the FFAA are occurring primarily as a result of delays in the delivery of contraceptives, both by military and commercial mail transport. Greater minimum stocks for clinics should reduce stockouts. Written guidelines for maintaining adequate reserves as well as closer supervision will be necessary. A followup visit by CDC consultants in mid 1981 is desirable to check on warehouse conditions and distribution procedures.

Unfortunately, the largest program with the greatest logistics problem is the Ministry of Health, but MOH officials minimize their logistics difficulties. The principle bottleneck is the delay in contraceptive delivery by its donor--PAHO/UNFPA. MOH officials could not explain the reasons for these delays. The MOH and PAHO need to establish a clear timetable for procurement and delivery so that the MOH can anticipate a longer lead time for future procurement, if necessary. The distribution system is well designed--the supply request form used by the MOH is the best of the five programs. But stockouts are occurring at the clinic level, and not all clinics and intermediate (provincial) warehouses are using the form. Closer supervision by central and provincial MCH personnel could improve distribution. However, only half of Ecuador's 20 provinces have MCH directors, and the MCH program director does not have line authority.

Despite the problems outlined in this report, the majority of programs should have an adequate logistics capability in 1981. Recommendations for each institution were discussed with the five program directors and USAID/Ecuador before departure.

I. PLACES, DATES, AND PURPOSE OF TRAVEL

Ecuador, January 17-30, 1981, at the request of USAID/Ecuador and AID/DS/POP/FPSD, to provide an assessment of the logistics capabilities of five public and private institutions. The consultation was provided by Mark Oberle, M.D., M.P.H., of the Program Evaluation Branch, FPED/CHPE/CDC. This travel was in accordance with the Resource Support Service Agreement (RSSA) between the Office of Population/AID, and FPED/CHPE/CDC.

II. PRINCIPAL CONTACTS

A. USAID/Ecuador

Dr. Kenneth Farr, Chief, Office of Health, Nutrition and Population
Mr. Manual Rizzo, Coordinator for Population

B. Asociacion Pro-Bienestar de la Familia Ecuatoriana (APROFE)

Dr. Pablo Marangoni, President
Lic. Eduardo Landivar, Chief of Operations
Ms. Jenny Duarte, Comptroller

C. Armed Forces (FFAA)

Dr. Guillermo Iturralde A., Director General of Health
Dr. Eduardo Cevallos D., Head, Dept. of Preventive Medicine and Family Welfare
Lic. Gustavo Gomez J., Health Educator

D. Centro Medico de Orientacion y Planificacion Familiar (CEMOPLAF)

Dr. Ligia Salvador U., President
Lic. Teresa de Vargas, Coordinator

E. Ministry of Health (MOH)

Dr. Cesar Troncoso, Director, Office of Family Health
Dr. Pedro Lovato, Chief, Maternal and Child Health Division
Sr. Luis Broos, Administrator
Ms. Renata Jara, Demographer
Dr. Vicente Munoz, Chief, Imbabura Province

F. Instituto Ecuatoriano de Seguridad Social Seguro Social Campesino (IESS)

Dr. Cesar Cordova, Medical Director
Dr. Mario Arias, Chief, Supply Section

III. BACKGROUND

USAID/Ecuador is planning to expand support of family planning activities in Ecuador in 1981 after a virtual hiatus during the last 3 years. In order to identify potential problem areas in contraceptive logistics, I briefly visited five service agencies. Despite limited time, for most of the agencies it was possible to: 1) visit the central warehouse and review the adequacy of warehouse space and procedures; 2) review the adequacy of current inventories and 1981 procurement; 3) discuss distribution from central warehouses to the field; and 4) determine whether a sample of distribution points had an appropriate supply--either by site visits or record review. However, because of the limited number of field visits, it was not possible to quantitate the prevalence of distribution problems.

The tables at the end of this report document the latest inventory for each central warehouse. These stocks are compared to usage by dividing the inventory by the usage in the previous reporting period (calendar 1979 or 1980). The result is the equivalent in months' supplies. However, inventories of the different institutions are not strictly comparable because the calculations differed slightly. For example, usage in some institutions was calculated from contraceptives distributed to users. In other institutions, only the shipments from the central warehouse to the distribution points were available as a surrogate estimate of usage. In addition, future demand may well be greater than current usage rates for most programs. Nevertheless, the equivalent in months' supplies is a useful indicator of the adequacy of warehouse reserves.

IV. EVALUATION OF CONTRACEPTIVE LOGISTICS

A. Social Security Institute--Campesino Social Security (IESS)

The Social Security Institute (IESS) reports 2,000 new acceptors per year in its urban clinics. A separate rural division, Campesino Social Security (SSC) currently operates 102 rural dispensaries with planned expansion to 168 dispensaries in 1981. Each dispensary is staffed by a full-time auxiliary and a part-time physician. These outpatient clinics offer services to self-employed individuals and their families. Currently, Norinyl is the only family planning method offered. SSC plans to add IUDs and barrier methods. In 1980, approximately 8,300 cycles of oral contraceptives were distributed (640 couple-years of protection). IESS obtains contraceptives through Pathfinder.

Currently, contraceptives for all IESS divisions are warehoused in a single Quito facility. In mid-1981, SSC plans to open a separate warehouse for its own supplies, including contraceptives. In addition to a monthly report of inventory and usage, each rural dispensary submits a quarterly supply request directly to the SSC central office. Norinyl is one of 145 medicines on the inventory list. Supplies are shipped by 1 of 5 SSC vehicles, and shipping delays of 30-45 days occur. However, a review of monthly inventory reports from 25 dispensaries revealed no clinic with less than a 3 month supply of oral contraceptives. Based on current usage rates, some clinics are overstocked: one had a 6 year supply on hand.

Although I was not able to discuss the overall IESS program effort, I did visit the current central warehouse. Conditions in this facility were excellent, and the staff were well aware of good warehouse procedures. With the exception of IUDs (Lippes C), which were in short supply, adequate stocks were on hand (Table 1). I was not able to visit the administrative section responsible for procurement.

The only recommendation made was that the SSC dispensaries allow a 2 month rather than a 1 month reserve when calculating contraceptive

requests. The current policy has not created problems because of the low demand for contraceptives in the rural population. However, as demand increases, a more liberal reserve will be needed to allow for shipping delays.

B. Center for Medical Orientation and Family Planning (CEMOPLAF)

The Center for Medical Orientation and Family Planning (CEMOPLAF) is a women's medical group founded in 1968. It offers family planning and prenatal services in four clinics in Quito, Quevedo, and Santo Domingo. In addition, CEMOPLAF sells contraceptives through 27 private gynecologists in the country and runs a general medical laboratory at one of its Quito clinics. CEMOPLAF estimates 6,300 new acceptors in its programs for 1980.

CEMOPLAF plans to increase IE&C activities and add three additional clinics in Tulcan (northern sierra), Esmeraldas (northern coast), and Guayaquil. The goal will be an additional 2,000 new acceptors by the second year of the project.

Some 35 percent of CEMOPLAF's income is generated by contraceptive sales and patient fees; the rest is supplied by FPIA. Contraceptives are ordered from FPIA in September and received early in the following year. Procurement of commodities has not been considered a problem. However, delays in customs appear to be endemic, such as a recent 5-month delay for customs clearance.

Contraceptives are warehoused in two separate locations. New supplies are stored in a room at the home of one of CEMOPLAF's workers. When the oldest stocks are used, supplies are moved from the room to the main warehouse--a room in the central Quito clinic. Warehouse conditions will be described subsequently.

Every 4 months, the person in each clinic responsible for supplies sends a requisition to the warehouse. The size of each order is 4-months' supplies plus 10 percent. The order is shipped immediately either via CEMOPLAF's sole vehicle or via commercial carrier. The frequency of emergency orders could not be determined, but supervisors do carry additional supplies during supervisory visits. Reportedly, stockouts have not occurred. However, since there was insufficient time to visit peripheral clinics, I could not verify this. A physical inventory of the central warehouse is conducted at the beginning of each year. Each clinic includes an inventory in its monthly report.

CEMOPLAF's coordinator felt that procurement and distribution were not problematical. However, the warehouse space was clearly inadequate, and she plans to rent warehouse space when funds become available later this year.

Conditions in both storerooms were unsatisfactory. In both warehouses ventilation was inadequate, and contraceptives were

stacked against the wall and on the floor without a pallet for ground ventilation. Because new stocks were placed first in the employee's home, the "first-in, first-out" principle was assured. However, boxes were not clearly labelled with the manufacture date or date of arrival. It was also not possible to determine from the inventory control cards (ICC) the destination, manufacture date, or date of arrival of each clinic's shipment. The warehouseman does not use this portion of the ICC. The oldest date for Norinyl 1 + 50 was March 1978. However, all of the Norinyl 1 + 80 (3,615 cycles) had a manufacture date of January 1974. There was essentially little demand for this commodity. Current inventory levels are shown in Table 2.

On the basis of this short visit, the following recommendations were made:

1) Contraceptives should be shipped to clinics in box lots. For example, Noriday comes in cartons of 600 cycles; each carton contains 10 boxes with 60 cycles each. Thus, Noriday should be shipped in multiples of 60.

2) The warehouseman should fill in all the columns for the ICC.

3) Norinyl 1 + 80 should be assayed and if found inadequate, disposed of. Samples were shipped from Atlanta to DS/POP/FPSE on February 3.

4) Distribution norms should be established and training provided for persons responsible for each clinic's stores as well as the central warehouse. CDC consultants are available to assist in this activity.

In addition, guidelines for proper storage were discussed (see Attachment 1).

C. Ecuadorean Family Welfare Association (APROFE)

The Ecuadorean Family Welfare Association (APROFE) is the IPPF affiliate in Ecuador. It provides clinical services in Guayaquil, Quito, and Cuenca, and conducts a community-based distribution program in the coastal lowlands. In addition, approximately 110 private physicians distribute free contraceptives in collaboration with APROFE. IPPF currently funds 87 percent of APROFE's $333,000 budget. In 1981, APROFE hopes to receive additional funds to expand the CBD program in four provinces (Guayas, Los Rios, Manabi, and Esmeraldas). The overall objective would be to expand the number of CBD posts from 120 to 1,300 and to double the number of new acceptors in all APROFE programs from the current level of 15,000. In addition, APROFE may participate in a commercial retail sales program.

APROFE orders its supplies from IPPF in March of each year. Delivery of last year's order is expected during the first quarter of this

year. The warehouse currently has an adequate inventory of IUDs, oral contraceptives, and Koromex, and an excess of diaphragms at 1979 usage rates (see Table 3). However, only a slim reserve remains for condoms (4 months), foam (6 months), and Neosampoon (1 month) in the central warehouse. In addition to the IPPF orders in 1981, APROFE may request commodities through Pathfinder for the expanded CBD program.

Contraceptives are currently stored in an air-conditioned room in the central office in Guayaquil. The Association is currently searching for a separate, enlarged, warehouse facility. The comptroller is in charge of the storeroom and is aware of the first-in, first-out (FIFO) principle and use of the cardex system. However, contraceptives were stored against a wall, thus limiting ventilation and increasing the risk of water damage. A physical inventory is conducted at the end of each year in the central warehouse, and the clinics submit monthly inventories and requests.

The three clinics have different supply routes. The Quito clinic is supplied separately by the MOH. AFPROFE's Cuenca clinic is supplied by air, and the Guayaquil clinic by local transport. The goal is to maintain a 2-month minimum of supplies in clinics. However, in Cuenca, stocks of condoms dropped below APROFE's minimum level in 6 of the last 12 months. No Neogynon was available at all in July and August when the main warehouse was also out of stock, but other oral contraceptives were available . In Guayaquil, Neogynon was unavailable from August to November 1980, and less than 2-months' supplies of condoms was available in 10 of the last 12 months. However, supply levels in Guayaquil are not worrisome since the warehouse is nearby. In the records of 16 CBD distributors examined, a 2 month supply of pills and condoms was maintained. However, for some isolated distributors with less frequent supervision, a larger reserve is maintained. In addition, as the CBD program matures, selective supervision, i.e., less frequent than the current monthly supervision, may be adequate for trustworthy distributors. The planned ratio of supervisors/distributors (1/100) will be difficult or impossible to achieve if all distributors are supervised monthly.

On the basis of this brief visit, I recommended that a clear set of guidelines for requesting supplies and maintaining minimum stocks should be issued to clinic and CBD personnel. In addition, the guidelines for warehouse operations was provided (Attachment 1).

D. Ministry of Health (MOH)

The Ministry of Health (MOH) provides family planning services in approximately 600 clinical facilities. The Maternal and Child Health Division monitors supplies and recommends administrative procedures for family planning. The MOH plans to expand rural health services with a $9.5 million loan from the International Development Bank (IDB). In addition, a 4 year UNFPA grant for MCH services will provide an additional $1.1 million per year. New family planning

acceptors are projected to increase from 40,000 in 1979 to 61,000 in 1984. Over the next 5 years, AID proposes to support contraceptive prevalence surveys, an evaluation system, and the creation of 6 teaching centers.

From the central level, the MOH maintains separate logistics systems for the MCH program (including contraceptives), vaccines, oral rehydration salts, and other medicines. The MOH currently obtains most contraceptives with UNFPA funds administered by PAHO. However, because of recent stockouts, small quantities have been obtained from other institutions. Substantial delays in procurement have occurred. The last request through PAHO was made in October 1979. Microgynon arrived in the port of Manta in May of the following year but was not delivered to the warehouse until December because the MOH had not been told of its arrival and did not receive notification of the shipment. A shipment of Neosampoon ordered at the time was not delivered until 1 year later. MOH officials do not know when the 1979 order of condoms will arrive and are obtaining small lots of condoms through emergency orders. Currently the warehouse contains less than a 1 month supply of condoms and no foam (Table 4). The overall supply of orals, IUDs, and Neosampoon is adequate. The warehouse itself will be described subsequently.

The central warehouse distributes contraceptives quarterly to the general medical warehouses in provincial capitals via public carrier. Each health facility submits a quarterly inventory and stock order to the provincial chief, but each clinic is subsequently responsible for transporting the supplies. The request forms are designed to provide a 3 month minimum and 6 month maximum of supplies. Not all facilities fill out the inventory section of the form, but at the one health center, which had a copy, the form was correctly used.

The central MCH warehouse is located underneath Quito's Olympic stadium. The inventory control cards (ICCs) were up-to-date and the warehouse manager was well aware of the first-in, first-out (FIFO) principle. However, a number of defects were observed. Space is somewhat limited, especially when large shipments of equipment arrive. Oral contraceptives were stacked to a height of 12 feet against a wall. Loose packets of Ovral as well as needles were scattered on the floor. The room had obviously not been cleaned recently. Construction outside exacerbated the dust problem. Boxes were not clearly labeled with date of arrival or manufacture. The fire extinguisher required recharging.

We were able to visit the provincial warehouse in Ibarra, as well as one hospital, one health center, and one subcenter. The provincial warehouse was clean, well-ventilated, and well organized. However, all oral contraceptives were inventoried together rather than by separate formulation. Cycles of Noriday were sitting in a box unprotected by the foil pack. Stocks of Noriday, Microgynon, and IUDs were adequate for 1980 use levels. However, only a 1 month

supply of condoms and no Neosampoon were available. Some 10,700 units of expired RoseTex condoms were separated for disposal.

In the hospital a few blocks away, it was difficult to evaluate the adequacy of all contraceptive stocks because of the lack of records. However, Noriday, Microgynon, foam, and condoms were not available. Only a 1 month supply of Ovral and Neosampoon were available. The hospital had requested Noriday during the previous two quarters but had only received Ovral, despite the fact that the provincial warehouse contained adequate stocks of Noriday. Unfortunately, the provincial MCH chief was not available to explain this discrepancy.

In the health center four blocks from the warehouse, Neosampoon and condoms were not available, but more than a 3-month supply of IUDs and orals were available. Finally, at a nearby subcenter, at least 3 months' supplies of Ovral, Lippes, and Neosampoon were available, but demand was minimal.

Although many of the stockouts can be attributed to delay in shipping commodities to Ecuador, the procurement process at the MOH has not taken delays into account. For example, at the time of the 1979 order, the warehouse contained only a 3 months' supply of Microgynon, and 5 months' supply of Neosampoon. In addition, only 5 months remained until the expiration date of the RoseTex condoms at the time of the condom order. Unless the donor agency can guarantee more prompt delivery, calculations for future procurements will have to allow a longer lead time between order and delivery.

In addition to contraceptive supplies, I attempted to evaluate the adequacy of general medical supplies by comparing clinic stocks of ampicillin, penicillin, and dicloxicillin with physicians' records of the number of patients who would require these antibiotics. Currently each provincial chief purchases approved generic drugs from suppliers whose prices have been approved by the MOH. Unfortunately, the medicine warehouse in Ibarra had only recently begun purchasing these drugs, so it was not possible to evaluate the extent to which this system was functioning.

On the basis of this short visit, the following recommendations were made:

1) The warehouse should be cleaned daily.

2) Provincial warehouses should use the cardex system, with a separate card for each type of oral contraceptive.

3) Clinics and provincial warehouses should be encouraged to fill in the complete inventory and supply request (PNSF-01 and PNSF-02) so that provincial and/or central family health personnel can check the adequacy of stocks.

4) The MOH and PAHO need to establish a clear timetable for procurement and delivery so that the MOH can anticipate a longer lead time for future procurements, if necessary.

F. Ministry of Defense (FFAA)

The Armed Forces family planning program currently operates 32 clinics, principally at military bases. In addition to active duty personnel, civilians in the area may elect to attend the military clinics free of charge. In some remote areas, these clinics provide the only health care service. Plans for 1981 call for the family planning program to expand to a total of 45 facilities with an increase in new acceptors from 3,000 per year to 5,000 per year.

The Ministry of Defense (FFAA) program obtains its contraceptives from the Pathfinder Fund. The program director is satisfied with procurement procedures but has not requested supplies for 1981 because of adequate stocks in country. Supplies are stored in two rooms at the Quito headquarters building. This warehouse will be described below.

The distribution system is a "pull" system with variable order size/fixed order interval. At the end of each month, the nurse or physician responsible for supplies in each clinic performs an inventory and submits the inventory and a supply request to Quito, along with a list of supplies used in the month. Clinics are supposed to maintain a reserve supply of 2 months.

Monthly shipments are dispatched via military mail service or commercial transport, whichever is most appropriate for each clinic.

The program director felt that shipping delays and stockouts were not a problem. The maximum delay was said to be 3 weeks. However, this was not the case in the one clinic I was able to visit in Cuenca, Ecuador's third largest city (pop. 115,000). In Cuenca, the monthly inventory of oral contraceptives dropped below 1 month's supply in 10 of the previous 23 months. Because of a delay in military mail in November 1980, a stockout would have occurred, but the nurse midwife was able to borrow supplies from the nearby Ministry of Health Clinic. Cuenca's FFAA clinic had oral contraceptives manufactured in 1975, despite the fact that the warehouse contained stocks manufactured in 1974. Thus, the first-in, first-out (FIFO) principal was not being followed at the central warehouse.

The warehouse experienced a number of other problems chiefly related to inadequate space. Contraceptives were stacked from the floor to a height greater than 8 feet; they were also stacked against the wall. Ventilation was non-existent. Laboratory chemicals were stored adjacent to contraceptives. There were ceiling water marks in one restricted location in each storeroom, although the warehouseman was not aware of water entering the rooms in the 5 years he had worked there. Shipping cartons were not labeled with date of manufacture or receipt. No one was aware of the FIFO principle. There was no fire

extinguisher available. On the favorable side, rats, insects, and heat were not felt to be a problem.

The inventory control cards were accurate but not current. The last entry was for November 1980. Contraceptives were occasionally issued in broken lots. The annual inventory and sporadic warehouse reports provided total counts, but not by lot number of date of manufacture. After a physical inventory on January 30, 1981, we determined that all of the Noriday was manufactured in 1974 and 1975.

I examined inventory records of three additional family planning clinics and two showed evidence of stockouts, although one clinic's records were incomplete. The third--Putumayo--had not established contact with the family planning office in 3 years. According to a program official, the local Capuchine priests had prevented family planning services from continuing there.

Overall stock levels appeared to be adequate or excessive (Table 5). However, only 9 Lippes B remained in the warehouse. All of the 138,131 cycles of oral contraceptives have a manufacture date of 1974 and 1975 (Table 6). No contraceptives have been ordered for 1981.

The warehouseman clearly needs additional training and close supervision. The program director told him to inventory old contraceptives by date of manufacture on January 20 and the task had not been performed by Janury 29.

In addition to the recommendations on warehouse procedures (see Attachment), the following recommendations were made:

1) Written guidelines to clinics should be issued to assist in calculating stock orders. A maximum of 6 months' and a minimum of 3 months' supply should be maintained. The importance of this recommendation was driven home by the military mobilization at the end of my visit: family planning logistics clearly took low priority.

2) An expanded warehouse is needed to provide for adequate storage.

3) The stocks of 1974 and 1975 Noriday should be assayed and if found inadequate, replaced. Samples were sent from Atlanta to DS/POP/FPSD on February 3.

V. CONCLUSIONS

The end product of any logistics system is the delivery of the product in question to its consumers. If stockouts (zero inventory of some commodity) occur, the system has failed. Even in the accessible locations that I was able to review for the last year, APROFE, FFAA and MOH clinics all suffered stockouts. CEMOPLAF may well have suffered stockouts if unscheduled deliveries had not been made during supervisory

visits. IESS had not suffered any stockouts as far as I could determine, but it currently distributes only one commodity to a very limited number of users.

For APROFE, IESS, and CEMOPLAF, the future logistics picture is positive. APROFE's stockouts were primarily the result of delivery delays. Clearance through Ecuatorian customs may continue to be a problem, but generous deliveries scheduled for 1981 should provide adequate reserves. In addition, the staff seemed eager to implement the suggested guidelines for warehousing and distribution. The supply activities of IESS have functioned well so far, and will probably continue to do so as the expansion of contraceptive services increase demand.

CEMOPLAF has an adequate inventory and will probably require minimal further input--probably in the form of a brief followup visit by CDC consultants, including training, as the new warehouse and additional clinics are installed.

Stockouts at the FFAA are occurring primarily as a result of delays both in military mail and commercial transit. Written guidelines for maintaining adequate reserves as well as closer supervision will be necessary. A followup visit by CDC consultants to check on warehouse conditions and distribution procedures is highly desirable for later in 1981.

Unfortunately, the largest program with the greatest logistics problem is the Ministry of Health, but MOH officials minimize their logistics difficulties. The principle bottleneck is beyond local control--the unexplained delays in contraceptive delivery by its donor agency--PAHO-UNFPA. However, the Ministry could minimize the impact of these delays by allowing a longer lead time for procurement. The distribution system is well designed--the supply requisition system is the best of the five programs. But stockouts are occurring at the clinic level, and not all clinics and intermediate (provincial) warehouses are using the request forms. Closer supervision by central and provincial MCH personnel could improve distribution. Unfortunately, only half of Ecuador's 20 provinces have MCH directors, and the MCH program does not have line authority.

Despite the problems outlined in this report, the majority of programs should have an adequate logistics capability in 1981. Recommendations for each institution were discussed with the five program directors and USAID/Ecuador before departure.

VI. SUMMARY OF RECOMMENDATIONS

In addition to the warehousing guidelines (see Attachment 1), the following recommendations were discussed with each institution:

A. IESS

1. SSC dispensaries should allow a 2-month rather than 1-month reserve when calculating contraceptive requests.

B. CEMOPLAF

1. Contraceptives should be shipped to clinics in box lots. For example, Noriday comes in cartons of 600 cycles; each carton contains 10 boxes with 60 cycles each. Thus, Noriday should be shipped in multiples of 60.

2. The warehouseman shold fill in all the columns for the ICC.

3. Norinyl 1 + 80 should be assayed and if found inadequate, disposed of. Samples were shipped from Atlanta to DS/POP/FPSD on February 3.

4. Distribution norms should be established and training provided for persons responsible for each clinic's stores as well as the central warehouse. CDC consultants are available to assist in this activity.

C. APROFE

1. A clear set of guidelines for requesting supplies and maintaining minimum stocks should be issued to clinics and CBD personnel.

D. MOH

1. The warehouse should be cleaned daily.

2. Provincial warehouses should use the cardex system with a separate card for each type of oral contraceptive.

3. Clinics and provincial warehouses should be encouraged to fill in the complete inventory and supply request (PNSF-01 and PNSF-02) so that provincial and/or central family health personnel can check the adequacy of stocks.

4. The MOH and PAHO need to establish a clear timetable for procurement and delivery so that the MOH can anticipate a longer lead time for future procurements if necessary.

E. FFAA

1. Written guidelines to clinics should be issued to assist in calculating stock orders. A maximum of 6 months' and a minimum of 3 months' supply should be maintained.

2. An expanded warehouse is needed to provide for adequate storage.

3. The stocks of 1974 and 1975 Noriday should be assayed and if found inadequate, replaced. Samples were sent from Atlanta to DS/POP/FPSD on February 3.

F. AID/Ecuador

1. AID/Ecuador should discuss the customs clearance problems with private agencies concerned with the aim of minimizing this bottleneck.

Mark W. Oberle, M.D., M.P.H.