



## Memorandum

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Subject Foreign Trip Report (AID/RSSA): Costa Rica--Contraceptive Logistics  
Management Feasibility Study, July 8-17, 1987

To James O. Mason, M.D., Dr.P.H.  
Director, CDC  
Through: Acting Assistant Director for Science, CHPE *Ken O.*

## SUMMARY

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## SUMMARY

During this consultation, I investigated the feasibility of transferring the responsibility for contraceptive logistics management from the Asociacion Demografica Costarricense (ADC) to the Ministry of Health (MOH) and the Caja Costarricense del Seguro Social (CCSS). From a technical point of view, both the CCSS and MOH are capable of managing their own contraceptive supplies. However, a transfer of responsibility will not resolve current problems associated with clearing contraceptives through customs, or health facility budgets, which may reduce contraceptive requisitions because they compete with curative drugs for the operating budget. Both institutions should be encouraged to study these problems in order to insure a continuous flow of contraceptive supplies to end users.

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

San Jose, Costa Rica, July 8-17, 1987, at the request of USAID/Costa Rica, to investigate the feasibility of transferring the responsibility for contraceptive logistics management from the Asociacion Demografica Costarricense to the Ministry of Health and the Caja Costarricense del Seguro Social. This consultation was in accordance with the Resource Support Services Agreement (RSSA) between the Office of Population, AID, and DRH/CHPE/CDC.

## II. PRINCIPAL CONTACTS

### A. USAID/Costa Rica

1. Sra. Betsy Murray de Marchena, Development Office

### B. Caja Costarricense del Seguro Social (CCSS)

1. Sr. Omar Quiros, Jefe, Aprovevisionamiento
2. Dr. Hernando Segura Vega, Director, Recursos Materiales
3. Dr. Enrique Falcon Llach, Jefe, Depto. de Farmacoterapia
4. Dra. Ana Lorena Fernandez, Depto. de Salud Preventiva
5. Ing. Juan Carlos Unfried, Jefe, Depto. de Almacenamiento y Distribucion
6. Dra. Margarita Castillo, Farmaceutica
7. Sr. Rafael Salazar Portugues, Jefe, Salud Materno Infantil

### C. Ministry of Health (MOH)

1. Sr. Franklin Chinchilla, Proveedor
2. Sr. Jorge Eduardo Brenes Vargas, Director, Sistema de Suministros
3. Sra. Anny Gairaud Rivera, Jefe, Central de Almacenamiento y Distribucion
4. Sr. Juan Villegas, Director Regional

### D. Asociacion Demografica Costarricense (ADC)

1. Sr. Jose Carrillo, Jefe, Depto. de Servicios y Suministros

## BACKGROUND

The purpose of this consultation was to study the feasibility of transferring the responsibility for contraceptive logistics management from the ADC to the MOH and the CCSS. If the transfer were to occur, the MOH would become responsible for forecasting, procuring and distributing contraceptives to its non-integrated health facilities. For the CCSS, a transfer would add the forecasting and procurement functions to its current responsibility of distributing contraceptive supplies to CCSS and MOH integrated facilities and to CCSS non-integrated facilities. A transfer would effectively eliminate ADC's role in contraceptive supply management in the national family planning program, thus allowing the Association to dedicate its talents and resources to other important areas.

The current status of contraceptive logistics in Costa Rica is summarized in reports by Richard Monteith and Mark Oberle of CDC (see CDC foreign trip reports, Costa Rica, dated April 24, 1986, and March 2, 1987); in a memorandum dated December 18, 1986, from Ricardo Vernon to John Townsend, both of the Population Council; and in an operations research proposal prepared by ADC and submitted to the Population Council in May 1987. In summary, rationing, emergency requisitions and stockouts have been frequent in the national contraceptive logistics system. For example, as reported in ADC's operations research proposal to the Population Council, approximately 35 percent of MOH integrated health facilities that are supposedly resupplied through the CCSS system received emergency supply support from ADC in 1986. Similarly, 27 percent of non-integrated facilities also required emergency resupply in the same year.

My assessment of the feasibility of transferring the responsibility for contraceptive logistics management from ADC to the CCSS and MOH takes into account the reports and memoranda cited above and my findings during this consultation.

#### IV. OBSERVATIONS

##### A. CCSS

My assessment of the CCSS central warehousing and distribution system confirmed that favorable changes have been made in the distribution of contraceptives to outlets since my last evaluation in April 1986. Requests for contraceptive supplies are no longer routed through the CCSS's Department of Preventive Medicine, where quantities were often reduced arbitrarily. Currently, requests for supplies are sent directly to CCSS's central warehouse and these requests are honored if adequate stock levels are on hand. Whether this has led to improved supply status at the outlet level is unknown. However, Ing. Juan Carlos Unfried felt that, in most cases, it probably has.

There are two factors that may limit reorder quantities that outlet pharmacists make: storage space and their operating budgets. Storage space was indeed at a premium in the pharmacies that I visited last year. However, if resupply of the pharmacies occurs on a timely basis, storage space should not be a serious problem in maintaining adequate stock levels of contraceptives in the outlets.

The pharmacists' budgets are probably a more serious factor in limiting reorder quantities, and these quantities will probably vary from outlet to outlet, according to the priorities the medical staffs of the outlets give to different drugs and medicines. On the other hand, if the outlets' budgets are prepared properly and with care, enough funds should be budgeted to cover all supply requirements, including those for contraceptives. Ing. Unfried pointed out that the success of the current supply system is strongly related to how well the outlets project their needs and translate these needs into a budget. However, he pointed out that it would be unlikely that a request for supplies would be denied if adequate supply levels were on hand in the central warehouse, even though the request may result in an outlet exceeding its budget. Ing. Unfried also pointed out that this would be particularly true if the requested supplies were donated contraceptives.

Although the pharmacists' budgets may be a limiting factor in some instances, overall this will probably mean that issue quantities from the central warehouse will correspond closely to quantities dispensed to family planning users in outlets. Outlets do not report use levels and it is unlikely that they will. However, if issue quantities closely correspond to quantities dispensed to users, the former could be considered as a surrogate for the latter and used in forecasting the supply requirements of the CCSS.

The CCSS system does not allow for a large margin of error in the resupply cycle, given storage limitations in the outlets and the low safety stock levels they maintain. This means that reorder quantities will have to be determined as precisely as possible and that resupply will have to occur on a timely basis. In light of the fact that things do go wrong in the best of

supply systems, I would recommend that the CCSS consider increasing safety stocks of contraceptives in outlets from 25 percent of operating stock to 50 percent of operating stock. In general, this should not result in a strain on available storage space in the outlets.

With the assistance of PAHO and AID, CCSS has implemented a computerized inventory control system which, when fully operational by the end of the year, will be an excellent tool in managing contraceptive supplies. The hardware is an IBM Cullinet system with five terminals for data entry. Although the system is not programmed to take into account inventories in outlets or quantities dispensed to users, the data that will be generated by the system should be adequate to forecast supply requirements and to indirectly assess the supply status of individual outlets.

Ing. Unfried pointed out that the storage of a year or more of contraceptive supplies in the central warehouse may place a strain on available storage space in this facility. This potential problem needs to be studied further. Possible solutions may include scheduling the receipt of multiple shipments of contraceptives from donors over the course of a year and/or the creation of more storage space in the central warehouse by constructing a mezzanine in one or more of the storage bays.

After reviewing the CCSS system, I have no reservations in recommending a transfer of responsibility for forecasting and procurement to the CCSS. CCSS officials also expressed interest in accepting this responsibility. Ing. Unfried would prefer not to resupply MOH regional warehouses, and forecast their requirements, since the CCSS computerized system is not designed for this task. His position is understandable.

#### B. MOH

The MOH does not have any experience in managing contraceptive supplies, but is willing to take on this task without the help of the CCSS (at one time it was proposed that CCSS resupply the MOH's five regional warehouses). With certain modifications in their supply reporting system, I feel that the MOH could adequately manage their own contraceptive supplies.

My principal concern with the MOH system is how issue quantities of medicines and drugs are determined. Every year each health facility determines its supply requirements taking into account such factors as the epidemiology of the catchment area, staffing patterns, time scheduled for a given service, and past use. From this exercise, yearly requirements for each article of supply are determined and together these requirements constitute a supply "modulo" for the health facility. Thus, the supply quantities designated in the "modulo" is what will be allocated to the health facility over the course of a year. In general, the supply allocations also include a 10 percent safety stock. If resupply occurs quarterly, which is the case in the MOH, a health facility can receive up to one-fourth of the annual allotment. Conversely, it can receive less than one-fourth, given its balances on hand. In turn, the supply requirements of a region are the sum of the supply requirements of the health facilities in the region plus a 10 to 15 percent safety stock.

My concern with this system of inventory control is that the health facilities' allotments (or maximum reorder levels) are not likely to change rapidly (if at all) in the event of decreases or increases in demand. The supply reports and requests for supplies that I reviewed support this observation. As a result, supply imbalances (under- or oversupply) of contraceptives are likely to occur at the health facility level.

What is needed is a dynamic system of control in which maximum supply levels assigned to health facilities would change according to use patterns of the different contraceptive methods. In order to establish such a system, the MOH would need to collect and report data on quantities dispensed to users and balances on hand, by method and brand. This should not be difficult to do since, on one hand, health facilities currently report balances on hand for drugs and medicines (but do not report use levels) and, on the other hand, those health facilities that currently receive contraceptive supplies from the ADC also report use levels of contraceptives (but do not report balances on hand). Thus, one form for drugs, medicines, and contraceptives could be designed to satisfy these two reporting requirements.

Sr. Jorge Brenes, Director, Sistema de Suministros, would like to have the health facilities report use levels. In fact, he brought this point up before I could mention to him that the MOH should consider collecting data on use. Sr. Brenes would like to combine data on use levels with balances on hand in order to analyze, among other things, the supply status of health facilities and regional warehouses.

If the MOH were to collect and report data on quantities of contraceptives dispensed to users and balances on hand, by method and brand, this would permit the establishment of a maximum and minimum supply system. This is a dynamic system of inventory control in that maximum and minimum stock levels assigned to outlets would change periodically according to use patterns of the different contraceptive methods offered by the program. This in turn would affect resupply quantities issued to health facilities and regional warehouses, since issue quantities would reflect fluctuations in demand levels and balances on hand. A maximum/minimum system would also permit an evaluation of the supply status of the family planning program in terms of months of supply on hand and an estimation of active users served by the program utilizing the Couple-Years-of-Protection (CYP) methodology. Additionally, the supply requirements of the MOH's program could be forecasted using AID's contraceptive procurement tables.

Sr. Brenes and I discussed the possibility of computerizing the contraceptive supply system. If the MOH reports quantities dispensed to users and balances on hand, by method and brand, this would indeed be a possibility. Six computers should be considered--one to be located at the central level and one each in the five regional headquarters. Hardware requirements include an IBM-AT or compatible, math coprocessor, printer, and other accessories. CDC consultants could assist in the installation of a contraceptive commodity monitoring system, developed by CDC, if requested. Prototype reports that the system generates were sent to the Mission after my return to Atlanta. The MOH would be responsible for training their personnel in the use of micro-computers prior to the installation.

Like the CCSS, the MOH may have difficulty in storing a year or more of contraceptive supplies in its central warehouse. This problem will require further study, but possible solutions include increasing storage space at the central warehouse, i.e., by constructing a mezzanine, and/or by scheduling multiple shipments of contraceptives to the MOH rather than just one per year.

### C. Discussion

From a technical point of view, both the CCSS and MOH are capable of managing their own contraceptive supplies. However, this does not mean that contraceptive logistics problems will not arise in these organizations if a transfer were to occur. For example, transferring responsibility to the CCSS and MOH will not automatically resolve current problems associated with clearing contraceptives through customs. Both institutions should be encouraged to study these problems in order to reduce delays and costs in processing contraceptives into the country.

Another problem that the Mission should focus on is the CCSS health facility budgets which may limit contraceptive reorder quantities because they compete with curative drugs for the budget. This is also a potential problem in the MOH. If a decision is made to transfer responsibility to the CCSS and MOH, the Mission should receive agreement from both institutions that health facility budgets will not act as a restraint on establishing and maintaining adequate stock levels of donated contraceptives in the outlets.

Both the CCSS and MOH stated that supervision of their respective supply systems needs to be strengthened. Lack of supervisory personnel, transport, and travel funds are factors in limiting the effectiveness of their supervisory systems. Since field supervision will be key to insuring a continuous flow of contraceptives to outlets, the Mission should explore the possibility of providing assistance to the institutions for improving supervision of their respective supply systems.

The CCSS and MOH are planning to introduce a new form to record selected characteristics of individual new and continuing users of family planning services. Forms will be submitted to the central level for data processing on a weekly basis. This form, if implemented, will increase the workload of outlet personnel, tie up computers that could be used for more useful purposes, and provide information that should be collected and analyzed only on a periodic basis. More importantly, the introduction of this form may preclude the reporting of contraceptive supply data which are essential for the management of supplies, but which could also be used to estimate the number of active users served by the two programs. I recommend strongly that the introduction of this form be reconsidered.

Finally, the Mission should take into account the following questions when considering a transfer of responsibility.

1. Is the Mission willing and prepared to provide support to the MOH and CCSS in the areas of training, computerization, vehicle maintenance and/or procurement, and other programmatic areas in the event a decision is made to transfer responsibility for contraceptive logistics from the ADC to the MOH and CCSS?

2. In the event of a transfer of responsibility, what impact would this have on ADC? What alternative roles might ADC pursue?
3. Would appropriate technical assistance be available to the Mission on a timely basis to assist the institutions to implement and/or improve their contraceptive logistics management systems?
4. If the status quo is maintained, can the ADC be effective in coordinating its activities with the CCSS and MOH? Would ADC's continuing role in contraceptives logistics management facilitate or deter greater cooperation between the institutions? .

A handwritten signature in black ink, appearing to read "RS Monteith". The signature is fluid and cursive, with a long horizontal stroke at the end.

Richard S. Monteith, M.P.H.