

MEMORANDUM

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
CENTER FOR DISEASE CONTROL

TO : William H. Foege, M.D.
Director, Center for Disease Control (CDC)
Through: Philip S. Brachman, M.D.
Director, Bureau of Epidemiology (BE)

DATE: December 12, 1979

PHS
12/13/79

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

SUBJECT: Foreign Trip Report (AID/RSSA): Ministry of Health, Colombia, October 28 - November 1, 1979

SUMMARY

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SUMMARY

At the request of AID/Washington and USAID/Colombia, I visited Bogotá, Columbia, October 28 through November 1, 1979, to review the Ministry of Health's new surgical contraception program. As of November 1, the Division of Maternal and Child Health and Population Dynamics, in coordination with Profamilia, has provided training in female sterilization techniques to 47 physician and nurse teams at regional training centers. Some 61 additional teams are scheduled to be trained by mid-year 1980. As of November 1, operative reports had been received for 114 sterilization procedures in 8 institutions. Analysis of these reports suggested that some graduates of the course had disseminated tubal ligation techniques to other clinicians in their local hospitals. However, underreporting is clearly a problem.

An estimated 280,000 sterilizations, mostly tubal ligations, have been performed in Colombia in the 1970's by the Ministry, Profamilia, and other providers. If these women experienced the marital or age specific fertility rates of the general population, they would have had from 42,000 to 65,000 births in 1979. Thus, sterilizations were associated with a decrease in the crude birth rate of 5-7%, i.e., a decrease of approximately 1-2/1,000. Also, sterilization procedures probably averted from 84 to 130 maternal deaths in 1979. Although the calculations presented in this report have not taken into account all the factors usually considered in estimating births averted, they probably represent the upper limit of sterilization's hypothetical effect. The demographic impact of sterilization will probably continue to grow as the prevalence of sterilization increases. The 1976

National Fertility Survey reported that 61% of currently married women were either sterilized or did not desire more children. Although this survey did not ask about desire for sterilization, the potential demand for sterilization services will probably continue to be high in the foreseeable future.

A number of areas of possible cooperation between CDC and the Ministry of Health were discussed. These included assistance in improving sterilization surveillance and logistics and a follow-up study of sterilization acceptors. These areas will be discussed during an upcoming visit to CDC in Atlanta by Drs. Michelsen, Daza, and Henao.

I. PLACES, DATES, AND PURPOSE OF TRAVEL

At the request of the Colombian Ministry of Health, USAID/Colombia, AID/POP/LA, and AID/POP/FPSD, Dr. Mark Oberle of FPED/CDC visited Bogotá, Colombia, to discuss the Ministry's sterilization program and possible means of monitoring program performance. The consultation took place on October 29-31, 1979. This travel was in accordance with the Resource Support Service Agreement between the Office of Population, AID, and CDC/BE/FPED.

II. PRINCIPAL CONTACTS

A. Ministry of Public Health (MOH)

1. Dr. Jorge Michelsen, Vice-Minister of Health
2. Dr. Luis Daza, Chief, Division of Maternal and Child Health and Population Dynamics
3. Dr. Oscar Henao, Chief, Population Dynamics Section, MCH

B. U.S. Agency for International Development

1. Mr. Marvin Cernik, Population Officer
2. Mr. Arturo Posada, Assistant Population Officer

C. Corporación Centro Regional de Población (CCRP)

1. Dr. Germán Riaño, Director, Programa Regional de Investigaciones en Fecundidad
2. Dr. Alcides Estrada, Secretary General

D. Asociación Pro-Bienestar de la Familia Colombiana (Profamilia)

1. Dr. Miguel Trias

III. OBSERVATIONS

A. Status of the Surgical Contraception Program

The Ministry of Health (MOH), Profamilia, and the private sector have provided surgical sterilizations in Colombia, with Profamilia performing the majority of procedures. The MOH in Colombia has offered female sterilization procedures chiefly through the gynecological services at larger hospitals. In 1978, 5,033 new acceptors chose female sterilizations at MOH facilities (8.2% of new MOH family planning acceptors).¹ This compares to 22,367 new acceptors sterilized through Profamilia, the Colombian IPPF affiliate, in 1978.

In March 1979, the MOH began training a nurse and physician from each of 108 regional and sub-regional hospitals in tubal ligation techniques in order to make these services more widely available. Training was conducted at regional training centers by Profamilia clinicians in coordination with the Division of Maternal and Child Health and Population Dynamics of the MOH. As of November 1, 47 physician-nurse teams had been trained. Some 61 additional teams are scheduled to be trained by mid-1980, with the understanding that they will return to their hospitals and disseminate the techniques learned to their colleagues. The MOH has distributed 52 mini-laparotomy instrument kits and 110 sets of laparoscope equipment to regional and sub-regional hospitals.

Although some teams have been in place for over half a year, only 114 operative reports from 8 of the 47 facilities with trainees had been received by the MOH central office as of November 1. A number of possible causes for this minimal reporting were suggested by MOH staff. First, many of the surgical teams had been trained so recently that they had not had time to perform any procedures. Second, the distribution of CO₂ cylinders proved difficult initially, and some units were not able to perform laparoscopies. Third, some facilities are in communities in which Profamilia has provided sterilization services and may be drawing away potential clients. However, it is planned to phase out Profamilia services to avoid duplication of effort. Finally, it is possible that the sterilization report form is viewed as one more piece of unnecessary paperwork, and the clinicians simply are giving it low priority. Without a survey of the sterilization course's graduates, it would be difficult to pinpoint remediable causes of poor reporting.

Closer supervision of program trainees is planned after training has been completed next year. Data from the 114 reported interval procedures are summarized in Tables 1-2, and a copy of the report form appears as Attachment 1. Of the 8 hospitals reporting, there were 3 hospitals with only 1 operator reporting; 3 hospitals with 2 operators; 1 hospital with 3 operators; and 1 hospital with 7 operators reporting. In other words, some dissemination of tubal ligation techniques is probably occurring.

A number of general observations can be made. Obstetrician-gynecologists performed 70.2% of reported procedures (Table 1). Laparoscopy with tubal occlusion by silastic rings accounted for nearly 2/3 of procedures. Program clients had a mean age of 31.9 years and a mean of 4.8 living children (Table 2). Some 55.3% of clients reported previous use of a contraceptive method. These demographic features are quite similar to those reported by Profamilia in recent years.² For example, Profamilia sterilization acceptors in August 1977 had a mean age of 32.0 years and a mean of 5.2 living children. Some 53.6% of recent Profamilia sterilization acceptors had used contraception previously.

B. Estimated Impact of Surgical Contraception in Columbia

As of mid-1979, approximately 280,000 surgical sterilization procedures had been performed in Columbia.³ This represents approximately 6.7% of married women of childbearing age. Based on prevalence data from the 1976 National Fertility Survey, a component of the World Fertility Survey, approximately 132,000 Colombian couples were protected by surgical sterilization in 1976.⁴ The estimated doubling in prevalence of surgical sterilization in 3 years is compatible with the increased number of procedures performed.

The demographic impact of sterilization can be approached in two contexts. First, what would happen if those couples accepting sterilization were not contracepting? The second, more practical approach is what would happen if sterilization services were not available and only non-permanent methods of contraception were used? The second approach is a difficult one. Although women sterilized in recent years have a preoperative contraceptive prevalence similar to that of the general population, the decision to accept sterilization suggests that these women would have a higher prevalence if surgery were not available. Among cases reported in recent years by the MOH and Profamilia, slightly over half of sterilized women had practiced contraception before the procedure.² This compares to 51.8% of currently married women practicing contraception as reported by the 1976 National Fertility Survey.

One measure of the hypothetical impact of a family planning program or specific method is the number of births averted by the program. There are specific methodologies, such as CONVERSE, for performing such a calculation.^{5,6} However, the complete calculation is quite complicated and requires knowledge of changes in marital status, age, and contraceptive behavior that may be difficult to calculate for a specific population. Sterilization acceptors may not have the same social characteristics as the general population, and the application of the census data to sterilization acceptors may introduce errors of unknown magnitude. With these caveats in mind, a rough estimate of the impact of sterilization in Columbia is provided in Table 3 by multiplying the 1976 age-specific fertility rates (ASFR) by the estimated numbers of women

sterilized in each age category. The result of this multiplication is the number of births that would have occurred the following year had they not been sterilized and had been subject to the general population's rates. A similar calculation was performed, using marital age-specific fertility rates.

A number of factors influence the interpretation of these estimates. The fertility rates are based on the entire population, including women who are practicing contraception. If sterilization were not available, many sterilized couples would practice medical methods of contraception--perhaps a higher percentage than in the general population. Thus, these ASFRs probably overestimate births averted by sterilization. At the same time, the 1976 ASFRs are higher than current levels of fertility, again suggesting an overestimate. Finally, the age distribution used to calculate births averted is a simplified, static one, ignoring the fact that women who were sterilized 5 years ago have entered an older, less fertile category. Since the vast majority of tubal ligations were performed in the last 5 years, the aging of early sterilization acceptors may not be a large problem. Thus, although additional input could probably "fine tune" the estimates, the calculations in Table 3, as they are, probably provide what could be considered an upper limit of the demographic impact of sterilization.

Using this upper limit, an estimated 42,000-65,000 births were averted in 1979 by sterilization procedures. This represents a decrease of 5.0-7.4% in the crude birth rate from 33 to 31 births per thousand population. This result is compatible with a linear regression analysis of Nortman and Hofstatter suggesting that a 2-6% increase in contraceptive prevalence is required for a decrease of 1/1,000 in the crude birth rate. Of course, this estimate should be viewed as a crude preliminary calculation. A more thorough analysis should allow for the aging of the population sterilized and should utilize fertility rates based on contraceptive practice, duration of marriage, and parity, as well as age. Results of the 1978 National Fertility Survey will allow more current estimates of the impact of sterilization programs on the crude birth rate.

The impact of sterilization on maternal mortality is even more difficult to estimate, since age-specific maternal mortality ratios are not available, and even the crude ratio may be imprecise. However, based on the above calculation and assuming a maternal mortality ratio of approximately 200/100,000 live births, a reduction of 84-130 maternal deaths in 1979 can be attributed to sterilization procedures. This would represent a reduction of 5.0-7.4% in the number of maternal deaths. This preliminary estimate of maternal deaths averted should also be viewed as an upper limit. An ongoing study of maternal mortality coordinated by the Corporación Centro Regional de Población (CCRP) should allow more precise estimates of the impact of sterilization on maternal mortality.

Whatever the precise impact of sterilization in Colombia may be, the impact will continue to grow as the prevalence of sterilization increases. In the 1976 National Fertility Survey, 61% of currently married women of child-bearing age stated that they desired no more children or were already sterilized. This suggests that the demand for sterilization procedures will probably continue to be high in the foreseeable future.

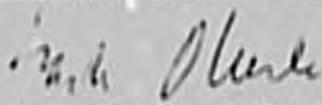
IV. FOLLOW-UP ASSISTANCE

A number of areas of possible cooperation between CDC and the MOH were discussed. These included assistance in improving sterilization reporting, as well as logistics. Also, a follow-up study of sterilization acceptors to determine complication rates and identify areas for program improvement was discussed. Further discussion of these areas will take place during an upcoming visit to CDC by Drs. Michelsen, Daza, and Henao tentatively scheduled for sometime in January or February 1980.

As discussed in Section III-A, few sterilization procedures have been reported to the central office. It is not clear whether procedures are being performed and not reported, or the surgical teams have not been active after the training course. Although reporting will probably increase as more operators are trained, it would be preferable to conduct a limited survey of program graduates to determine whether sterilizations have been performed and what problems have developed. Such a survey could be conducted directly by the Population Dynamics Section or through the Maternal and Child Health Division's regional (departmental) officers. Feedback from program graduates would be particularly helpful now so that program surveillance, improvements, and/or problem areas can be discussed with those who will be trained in the next half year.

Another approach to monitoring surgical contraception is a follow-up study to assess complication rates, method failures, user satisfaction, and other variables. In order to provide useful data, this type of survey would require a larger number of program acceptors than currently reported, but when possible a follow-up survey would provide useful feedback on program performance.

Finally, if supervisory personnel perceive important logistical problems in the program, a review of logistics procedures would be desirable.


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Family Planning Evaluation Division
Bureau of Epidemiology

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6. Nortman DL, Potter RG, Kirmeyer SW, Bongaarts J: Birth rates and birth control practice - relations based on the computer models TABRAP and CONVERSE. Population Council, New York, 1978.
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INSTRUCTIVO PARA DILIGENCIAR EL FORMULARIO

"ESTERILIZACION FEMENINA"

No. DE HISTORIA CLINICA

Anoto el No. correspondiente a la historia de la paciente.

1. **SERVICIO SECCIONAL DE SALUD**
Escriba el nombre del Departamento, Intendencia, Comisaria o Secretaría al cual pertenece el organismo.
2. **MUNICIPIO**
Escriba el nombre del municipio a que pertenece el organismo.
3. **HOSPITAL**
Anoto el nombre del Hospital
4. **APELLIDOS - NOMBRE**
Escriba primero los apellidos, seguidos del nombre de la paciente
5. **EDAD**
Escriba el número de años cumplidos de la paciente
6. **DIRECCION**
Anoto la dirección completa y el teléfono de residencia de la paciente
7. **AÑO DE NACIMIENTO**
Anoto en las casillas correspondientes, en números arábigos, los dos (2) últimos dígitos del año en que informó haber nacido. (Ejemplo: si nació en 1939, anoto 39)
8. **ZONA DE RESIDENCIA**
Cuando la paciente reside en la ciudad o cabecera municipal anota una X en la casilla correspondiente a urbana (U) y si reside en una vereda o área dispersa anota X en la casilla correspondiente a Rural (R)
9. **EDUCACION: AÑOS DE ESTUDIO**
Pregunte a la paciente el número total de años de estudios, Primarios, Bachillerato, Superior, otros y proceda así. Si hizo 4 de Bachillerato anota 9 (5 de Primaria y 4 de Bachillerato) en números arábigos, antecediendo al 0 cero (0) cuando hay un solo dígito (09)
10. **NUMERO DE EMBARAZOS**
Corresponde al número de veces que la paciente informó haber quedado embarazada.
PROCEDIMIENTO: Anote el número en la casilla correspondiente antecediendo al cero (0) cuando hay un solo dígito. Este procedimiento es válido para las variables Nos. 11 - 12 - 13 y 14.
11. **HIJOS NACIDOS VIVOS**
Corresponde al total de hijos de la mujer que nacieron vivos.
12. **HIJOS VIVOS ACTUALMENTE**
Corresponde al número de hijos vivos que actualmente tiene la paciente.
13. **HIJOS NACIDOS MUERTOS**
Corresponde al número de hijos de la paciente que nacieron muertos.
14. **ABORTOS**
Es el número de abortos (Natural o provocado) que ha tenido la paciente.
15. **RESULTADO DEL ULTIMO EMBARAZO**
Anoto una X en la casilla correspondiente al resultado del ÚLTIMO embarazo: fue nacido vivo, (M. V.) Nacido muerto (M. M.) u abortó.
16. **TIEMPO ENTRE LA TERMINACION DEL ULTIMO EMBARAZO Y ESTE PROCEDIMIENTO**
Si la paciente ha estado embarazada, pregúntele el tiempo transcurrido entre la terminación del último embarazo y el procedimiento que se le va a practicar. Anote una X en la casilla correspondiente.

17. **RAZON PRINCIPAL PARA ESTE PROCEDIMIENTO**
Se refiere al motivo principal por el cual la paciente decide practicar el procedimiento; anote una X en la casilla correspondiente (una sola respuesta) si anota X en la casilla OTRAS especifique la razón
18. **Ha estado planificando antes de esta intervención**
Anoto X en la casilla correspondiente. Cuando la respuesta sea afirmativa, pregúntele donde y anote de nuevo otra X en la casilla correspondiente.
19. **Último método contraceptivo usado antes de esta intervención**
Anoto X en la casilla correspondiente al método que usó la paciente antes de esta intervención. Aclare el método si anota X en otra.
20. **TIEMPO DE USO DEL MISMO**
Se refiere al último método (pregunta 19); anote X en la casilla que corresponda.
21. **EXAMEN PELVICO**
Anoto X en las casillas que corresponda, teniendo en cuenta el resultado del examen pélvico que se practicó a la paciente
22. **INFECCION PELVICA**
Anoto de acuerdo a la clasificación patológica encontrada.
23. **ANESTESIA**
Anoto X en la casilla correspondiente. Si anota X en la casilla OTRA especifique cual.
24. **PROCEDIMIENTO EFECTUADO POR**
Anoto X en la casilla que corresponde si el procedimiento fue realizado por: Interno, Médico general, Residente, Gineco-obstetra, Cirujano general.
25. **PROCEDIMIENTO REALIZADO**
Anoto X en la correspondiente casilla. Si es otra diferente a las (4) que aparecen tiene el rubro con su correspondiente casilla para material.
26. **TECNICA DE OCLUSION**
Anoto X en la casilla que corresponda.
27. **FECHA DE LA CIRUGIA**
Anoto en números arábigos el día, mes, año en que se practicó la Cirugía así:

0 8	0 3	7 9
DIA	MES	AÑO

(8 de Mayo de 1979)

28. **NOMBRE DEL CIRUJANO**
Anoto nombres y apellidos del Médico que realizó la intervención quirúrgica. (la firma no)
29. **POS-OPERATORIO INMEDIATO**
Anoto datos sobre horas de los controles pos-operatorios, pulso y tensión arterial, seguida de la observación que encuentre importante.
30. **FECHA PROGRAMADO PRIMER CONTROL**
Dentro del primer mes y debe ser realizado por el Médico. Anoto en números arábigos el día, mes y año del primer control programado a la paciente.

OBSERVACIONES:

1. **EL FORMULARIO SE DILIGENCIA EN ORIGINAL Y COPIA**
El original se envía al Hospital direccionado a la División Materno Infantil del Ministerio de Salud. (Calle 16 No. 7-39) Ofc. 308
Se copia en el archivo o historia de la paciente.
2. **PERIODICIDAD**
Mensual
3. **RESPONSABILIDAD DEL ENVIO**
El personal de enfermería tomará todos los formularios que se diligencian en 1 mes y los enviará al nivel central
4. **RESPONSABILIDAD DEL DILIGENCIAMIENTO MEDIO**
De la variable No. 21 a la variable No. 30
PERSONAL DE ENFERMERIA
Anotar el No. de Historia
De la variable No. 1 a la variable No. 20
Las variables No. 29 y 30. Este último de acuerdo con el Médico que realizó la intervención.
Diligencia el formulario en físico. Devuélvalo antes de remitirlo al nivel Central.

TABLE 1

Reported Tubal Ligations by Operative Characteristics
 MOH - Colombia
 January-October 1979

<u>Operator</u>	<u>No.</u>	<u>%</u>	<u>Type of Procedure</u>	<u>No.</u>	<u>%</u>	<u>Occlusion Technique</u>	<u>No.</u>	<u>%</u>
Intern	7	6.1	Mini-			Ligature Only	3	2.6
General Practitioner	21	18.4	Laparotomy	19	16.7	Ligature and		
Resident	1	0.9	Laparotomy	17	14.9	Excision	6	5.3
Ob-Gyn	80	70.2	Laparoscopy	75	65.8	Fimbriectomy	14	12.3
Surgeon	0	0.0	Colpotomy	0	0.0	Salpingectomy	13	11.4
Not Specified	5	4.4	Not Specified	3	2.6	Silastic Ring	70	61.4
						Clip	0	0.0
						Cautery	0	0.0
						Not Specified	8	7.0
Total	114	100.0	Total	114	100.0	Total	114	100.0

TABLE 2

Patients Receiving Tubal Ligations by Age Group and
Number of Living Children
MOH - Colombia
1979

	<u>Age Group</u>					
	<u>20-24</u>	<u>25-29</u>	<u>30-34</u>	<u>35-39</u>	<u>40-44</u>	<u>45-49</u>
#	3	24	41	38	7	1
%	2.6	21.0	36.0	33.3	6.1	0.9

	<u>Number of Living Children</u>											
	<u>0</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>
#	2	3	9	15	27	14	14	12	8	4	4	2
%	1.8	2.6	7.9	13.2	23.7	12.3	12.3	10.1	7.0	3.5	3.5	1.8

* Median age = 32.7 years
Average age = 31.9 years

TABLE 3
 Estimated "Births Averted"* by Sterilizations
 Colombia, 1979

<u>Age at Sterilization</u>	<u>Estimated "Births Averted" Assuming ASFR</u>	<u>Estimated "Births Averted" Assuming Marital ASFR</u>
15-19	20	128
20-24	2,633	4,763
25-29	10,268	17,007
30-34	16,085	22,258
35-39	11,842	17,096
40-44	1,414	3,507
45-49	37	98
Total	<u>42,301</u>	<u>64,857</u>

* See text for definition