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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: November 13, 1979

FROM Joel R. Greenspan, M.D.

SUBJECT: Foreign Trip Report: Seoul, Republic of Korea, May 4-11, 1979

I. DATES AND PLACES OF TRAVEL
II. PURPOSES
III. OBSERVATIONS
IV. CONTACTS
V. ANALYSIS
VI. RECOMMENDATION
APPENDIX A - Background
APPENDIX B - Prevalence of Contraceptive Sterilization

I. DATES AND PLACES OF TRAVEL

May 4-11, 1979: Fourth International Conference on Voluntary Sterilization, Seoul, Republic of Korea, sponsored by the International Project of the Association for Voluntary Sterilization (IPAVS), New York, New York.

II. PURPOSES

1. At the request of IPAVS, to serve as a member of a conference task force entitled, "Current and Future Male Sterilization Technology."

2. To serve as a conference delegate.

3. To discuss CDC sterilization surveillance activities with other delegates.

III. OBSERVATIONS

A. Voluntary Sterilization in International Perspective

According to the best international estimates available for 1978, voluntary sterilization is the most prevalent method of fertility management in the world. By the end of 1978, 90 million couples worldwide were using voluntary sterilization as their method of birth control compared to 20 million in 1970. In nearly all countries in the past few years, tubal sterilization was performed more frequently than vasectomy.

The Peoples Republic of China and India lead the world in the estimated number of couples controlling fertility by voluntary sterilization as of 1978, with 36 million and 22 million couples, respectively. According to the AVS Executive Director, the lowest sterilization prevalence rates presumably occur in Latin America and Africa, although no statistics were presented to substantiate this.

A major problem perceived by leaders in the worldwide voluntary sterilization movement is that in most developing countries with sterilization programs, the potential demand for services currently exceeds the health care system's ability to supply it.

A. Trends in Male vs. Female Sterilization

At the request of the Task Force on Current and Future Male Sterilization Technology, I prepared a table (Appendix B) illustrating the prevalence of contraceptive sterilization and estimates of current users among married women 15-44 for selected countries and years. The best available data, which are unfortunately incomplete, out of date, and/or unavailable for many countries, indicate that female sterilization is more prevalent than male sterilization and that in recent years, more female procedures are being done annually compared to male procedures.

Assuming these observations are correct, the reasons for the increasing incidence of female sterilization are not well understood. Also the public health consequences of this phenomenon, should it continue, are potentially severe. While male sterilization is as effective as female methods, vasectomy is generally felt to be simpler to perform, less expensive to provide, and most importantly safer in terms of morbidity and mortality risk. If a couple decides to end fertility through sterilization, and the woman decides to incur the medical risk, there are two public health approaches that could be implemented, either or both of which could lead to less morbidity and mortality. First, research should be done to determine exactly what short- and long-term risks women are exposed to and to what degree can changes in medical practice prevent excess complications and reduce the risk at least to that associated with vasectomy. While the morbidity and mortality risks of female sterilization are assumed to be higher than those for vasectomy, an effort should be made to make these risks well known to clinicians and couples around the world with the objective of having more men choose vasectomy as opposed to their partners choosing tubal sterilization.

C. Sterilization Reversal

Techniques of sterilization reversal were discussed in a special plenary session which was well attended by clinicians from both developed and developing nations. Newly developed microsurgical techniques have increased the probability of accurately reconnecting the vas deferens or fallopian tubes. Proportionally less vas is

destroyed during vasectomy compared to destruction of the fallopian tube during tubal sterilization. Some tubal sterilization techniques may destroy up to 50% of the fallopian tube making it nearly impossible to regain tubal function even if the reanastomosis is accurate. Because there is proportionately more tissue to work with, reconnection of the vas deferens is nearly always possible using microsurgical techniques.

Clinicians reported an increasing demand for vasectomy reversal. It is felt that this does not necessarily reflect regret at having had a vasectomy nor an epidemic of poor counseling. Most men who seek reversal do so after experiencing an unanticipated life crisis such as divorce, death of a spouse followed by remarriage, or the death of a child.

An accurate reconnection of the vas deferens does not necessarily guarantee subsequent fertility. It has been observed in recent years that gradual pressure mediated patho-physiological changes occur in the vas deferens, epididymis, and testes following vasectomy. Pressure mediated changes can affect subsequent fertility in several ways. First, if the testicular end of the vas deferens is tightly sealed at vasectomy, gradually increasing pressure over time causes the testicular end of the vas and the epididymis to thin out and eventually "blow out." This causes leakage of sperm which will form sperm granulomas which in turn will lead to secondary obstruction. Second, although not well understood yet, subtle pressure mediated changes in the epididymis affect sperm motility. There is some evidence that there is an inverse association between longer time intervals from vasectomy to reversal and lower proportions of motile sperm.

Requests for reversal of tubal sterilization are also increasing. The characteristics of women seeking reversal and factors that affect subsequent fertility have not yet been well defined.

IV. CONTACTS

Dr. Sherman Silber, St. Louis, Missouri - a urologist and expert in microsurgical vasovasostomy. He has done more than 800 cases with follow-up and is currently assessing the association between subsequent fertility and length of time from vasectomy to reanastomosis.

Dr. James Felson, Bethesda, Maryland - Director of Operations, Indian Health Service. Dr. Felson expressed interest in having Indian Health Service statistics on surgical sterilization included in future CDC sterilization surveillance reports.

Dr. Pramilla Senanayake - Deputy Director, Biomedical Sciences Department, International Planned Parenthood Federation (IPPF), London, England. IPPF sponsors or funds sterilization programs in 42 developing countries. In 1977, 116,000 sterilizations were performed in these programs. Dr. Senanayake has proposed an international collaborative program to evaluate at the clinic level 1) contraceptive acceptance, 2) safety factors associated with all fertility control methods, and 3) long-term health risks and benefits associated with fertility control. She anticipates seeking CDC consultation for the development, field work, and analysis of such a collaborative program.

V. ANALYSIS

A. The presumed safety of male and female surgical sterilization was stated as fact by both physicians and nonphysicians at plenary sessions and workshops. In fact we know that the shortand long-term morbidity risks and the risk of sterilization mortality are not well defined in either the developed or developing world. It appears that strong program advocates have a false sense of security regarding the safety of sterilization operations. With the risks essentially undefined not only is informed consent compromised, but with the millions of sterilizations occurring each year in the world, this represents a potentially large global public health problem. CDC's commitment and leadership in the field of sterilization safety will probably have global impact.

B. With the demand or potential demand for sterilization services exceeding the ability of many health care systems to provide them, the emphasis particularly in developing countries has been on program development and management. A recurrent theme at this meeting was the recognition by program managers of the need for better surveillance and evaluation of sterilization services so that future programs can be planned efficiently and be cost-effective. In general, country specific surveillance or surgical sterilization worldwide is poor.

VI. RECOMMENDATIONS

A. CDC should continue without delay its work in assessing sterilization associated morbidity and mortality in the U.S. The results of this work should be disseminated internationally, perhaps through the World Federation of Associations for Voluntary Sterilization.

B. Studies of sterilization safety should be encouraged in developing countries to find the safest methods applicable to the developing world. CDC has expertise in this field, and we should provide consultation and assistance on request.

C. Better worldwide surveillance of sterilization should be begun particularly to assess the demographic aspects of this phenomenon and to assist countries in program planning and resource allocation. The World Federation of Associations for Voluntary Sterilization with consultation from CDC could be encouraged to assume a more active role in meeting this objective.

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APPENDIX A

Background

The Association for Voluntary Sterilization (AVS) was organized in 1965. It is a nonprofit organization with headquarters in New York, New York dedicated to making voluntary surgical contraception known and available to all U.S. couples desiring a permanent contraceptive method.

The International Project of the Association for Voluntary Sterilization was organized in 1972. With headquarters in New York, New York, it is a nonprofit, international technical assistance and funding agency whose primary purpose is to advance the acceptance and availability of surgical sterilization as a basic component of family planning and health services programs mainly in developing countries. IPAVS has provided money, equipment, training, and technical assistance to health professionals, health and medical organizations, medical schools, religious institutions, or governments in more than 60 developing countries. IPAVS is mainly interested in working with national and local leaders to help them develop and implement voluntary surgical sterilization programs within their own countries and local communities.

IPAVS founded the World Federation of Associations of Voluntary Sterilization (WFAVS), a professional, international public health organization with members from national associations. The primary purpose of WFAVS is to promote recognition and use of voluntary sterilization by medical professionals.

At three year intervals since 1970, IPAVS has sponsored an international meeting intended to be a world leadership conference of health and other professionals involved in the development and delivery of surgical sterilization services. The Fourth International Conference focused primarily on the nonmedical aspects of surgical sterilization as an intergral part of family planning and health care programs. The conference had two primary goals: 1) to promote the inclusion of voluntary sterilization in national fertility control programs and 2) to identify factors that promote the acceptability and accessibility of voluntary sterilization.

Among the 500 conference participants from developed and developing countries were national policy makers as well as key program planners and administrators.

APPENDIX B

PREVALENCE OF CONTRACEPTIVE STERILIZATION
AND ESTIMATES OF CURRENT USERS AMONG
MARRIED WOMEN AGE 15-44
FOR SELECTED COUNTRIES AND YEARS

Country	Year	Prevalence(%) Total	Male	Female	Estimated # Married Couples Using Sterilization
			ASIA		
Middle South Asia					
Bangladesh[1]	1977	2.2	1.5[3]	0.7[3]	405,000
India[1]	1977	20.6	15.5[3,5]	5.1[3,5]	21,925,000
Nepal[6]	1978	3.3	2.5	0.8	80,000
Pakistan[8]	1975	2.8	0.9	0.9	252,000
Sri Lanka[2]	1975	9.1	1.0	8.1	173,000
Southeast Asia					
Indonesia[1]	1977	0.2	—[4]	0.2	42,000
Malaysia[1]	1976	3.0[7]	—	—	41,000
Philippines[6]	1978	4.8	0.7	4.1	270,000
Singapore[2]	1976	17.4	0.7[3]	16.7[3]	48,000
Thailand[6]	1978	14.0	1.7	12.3	727,000
East Asia					
China People's Republic of[2]	1978	20.0	—	—	35,000,000
Hong Kong[1]	1977	17.0	2.0	15.0	88,000
Japan[2]	1975	5.0	—	—	—
Korea, Republic of[6]	1978	14.5	5.4[5]	9.1[5]	698,000
Taiwan[1]	1977	11.0	1.0	10.0	235,000

Country	Year	Prevalence(%) Total	Male	Female	Estimated # Married Couples Using Sterilization
		AFRICA			
Tunisia[6]	1978	7.2	0	7.2	58,000
		LATIN AMERICA			
Tropical South America					
Colombia[1]	1977	6.8	0.2	6.6	204,000
Paraguay[11]	1977	2.9	___[4]	2.9	15,000
Sao Paulo State,[11] Brazil	1978	16.1	0.6[11]	15.5	NA
Middle America					
Costa Rica[8]	1978	13.0	1.0	12.0	39,000
El Salvador[6]	1978	23.6	1.1	22.5	111,000
Guatemala[6]	1978	1.4	0.3	1.1	15,000
Mexico[10]	1978	7.0	0.3[11]	6.7	642,000
Panama[6]	1978	22	___[4]	22	88,000
Caribbean					
Dominican Republic[2]	1977	12	___[4]	12	120,000
		North America			
U.S.A.[12]	1976	19.3	9.7	9.6	5,247,000
Canada[2]	1978	___	___[13]	___	1,000,000

FOOTNOTES

___ Data not available

[1] Nortman, Dorothy L. and Hofstutter, Ellen. Population and Family Planning Programs. 9th Ed. N.Y. Population Council 1978.

[2] Greene, Cynthia P. "Voluntary Sterilization: World's Leading Contraceptive Method." Population Reports Special Topic Monographs No. 2. March 1978.

[3] Estimate based on 1976 or 1977 sterilization incidence data from males and females.

[4] Estimated to be 0.1%.

[5] About 80 % of recent acceptors have been female. Prior to 1977 most new acceptors were male.

[6] Sterilizations Table (CY 1978) in Family Planning Services Statistics Quarterly Report -- 1978. Agency for International Development Department of State. U.S.A.

[7] Mostly female. Vasectomy not widely practiced.

[8] World Fertility Survey.

[9] Includes even married men and women.

[10] Survey conducted by Westinghouse Health Systems.

[11] From fertility surveys in Costa Rica, Panama, Mexico, Paraguay, and El Salvador, only about 4% of sterilized couples used vasectomy as their method. Center for Disease Control, U.S.A. April 1979.

[12] 1976 National Survey of Family Growth, National Center for Health Statistics, DHEW, U.S.A.

[13] Fewer than 2% of all sterilizations were to men.