

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. *PSB*
Director, Bureau of Epidemiology (B.E.)

DATE: 28 March 1980

FROM : Michael J. Rosenberg, M.D., M.P.H.
Family Planning Evaluation Division, BE

SUBJECT: Foreign Trip Report (AID/RSSA): Campinas, Brazil, March 14-19, 1980

	<u>Page</u>
I SUMMARY	1
II PRINCIPAL CONTACTS	1
III ACCOMPLISHMENTS	2
A. Study of ovulatory cycles and breast tumors	2
B. Discussions regarding Ellen Hardy's coursework	3

I. SUMMARY

This trip provided followup consultation for a project to evaluate the number of ovulatory cycles during a woman's reproductive lifetime as a risk factor for breast cancer and benign breast disease. One of the factors being investigated is the possible protective effect of oral contraceptives on the development of breast cancer. Data collection has been completed, and during this trip I helped with reviewing the data to resolve missing portions or inconsistencies, with formulating a plan for analysis, and with writing computer programs to be used in the analysis.

II. PRINCIPAL CONTACTS

State University of Campinas, Faculty of Medicine
Ellen Hardy
Ronaldo Araki
Anibal Faundes
Ana Vichi

III. ACCOMPLISHMENTS

A. Ovulatory cycles as a risk factor for breast disease.

This trip provided continuing assistance on a project to evaluate the number of ovulatory cycles experienced by a woman during her reproductive lifetime as a risk factor for breast cancer and for benign breast disease. A major hypothesis to be evaluated is that oral contraceptives, by virtue of inhibiting ovulation, may protect against the development of breast cancer. Details of the study's design have been presented in a previous report¹. The study is being performed under the auspices of the University of Campinas in Campinas, Brazil.

The bulk of the trip was to resolve discrepancies in frequency tables and cross tabulations which were generated as a result of my last trip to Brazil and work done when Ronaldo Araki visited the CDC in December 1979. I also assisted with writing and debugging the specialized computer programs for the project.

Ellen and I formulated a method of analyzing the data which involves determination of the number of ovulatory cycles for each case of benign breast disease and of breast cancer. The study addresses two questions, the risk of breast cancer and the risk of benign breast disease. To evaluate each risk factor, at least one control subject will be matched to each case by date of birth. The date of diagnosis for the case will become the reference date, and the number of ovulatory cycles to that date will be calculated for each case and her control subject. The women will thus be grouped by age, and

¹Rosenberg MJ: Memo to William Foegen, M.D., November 9, 1979

each age stratum will then be organized into standard tables to evaluate a given risk factor as a determinant of outcome (cancer or benign disease) according to the methods of Gart² and Miettinen³. Significance in trend will be tested using the Mantel extension⁴, and confounding will be controlled using the Mantel-Haenszel⁵ technique.

B. Discussions regarding Ellen Hardy's coursework.

The CDC is providing field supervision for Ellen's work toward a master's degree in epidemiology from Goddard College. Part of that work involves writing a paper on the etiology of breast cancer, and we discussed the organization of the paper and the general issues which it will address. We also reviewed references which I felt were suitable for inclusion.

Michael Rosenberg
Michael J. Rosenberg, M.D.

²Gart JJ: Point and Interval Estimation of the Common Odds Ratio in the Combination of 2X2 Tables with Fixed Margins. *Biometrika* 57:471, 1970
³Miettinen OS: Simple Interval Estimation of Risk Ratio. *Am J Epidemiol* (abstract) 100:515, 1974
⁴Mantel N: Chi-Square Tests with One Degree of Freedom: Extension of the Mantel-Haenszel Procedure. *J Amer Stat Assoc* 59:690, 1963
⁵Mantel N, Haenszel W: Statistical Aspects of the Analysis of Data from Retrospective Studies of Disease. *J Natl Cancer Inst* 22:719, 1959