

ANNUAL REPORT

July 1, 1969 - June 30, 1970

I. MAJOR DEVELOPMENTS AND TRENDS, DECADE 1960-1970

The graduate training programs of the Department of Epidemiology were initially conceived and specifically developed to integrate a number of disciplines as they relate to the quantitation and analysis of modern health problems. The Department has been and continues to be a dynamic blend, since the faculty and the students represent diverse backgrounds, including sociology, psychology, anthropology and the human biological sciences.

This approach has allowed the development of strong programs in the newly defined public health areas, such as population, environmental epidemiology and health services research.

Members of the faculty, assisted by second-year doctoral students, conduct one of the key required core courses, Principles of Epidemiology, for approximately 200 students in the School of Public Health. Specific courses have been designed to meet the needs of programs in the other nine departments within the School, particularly, Epidemiology in Environmental Health, Behavioral Science Measurement in Health Programs and Research, and Dental Epidemiology.

Members of the Department have been involved in numerous research projects, many of which have provided field training experiences for students. The Evans County Study is a 10-year longitudinal data collection with emphasis on cardiovascular disease; the Ponape Project concerns the definition of health states relating to the process of change in an island population moving from agrarian to industrial economy; a study on the Delivery of Health Services measures the patient selection, use and satisfaction with such services; geographic mapping of mortality due to heart diseases, health record linkage, and mathematical models are examples of the usefulness of computer technology in the analysis of health states.

The Department offers five degree programs. During the decade 1960-1970, 44 have completed master's programs and 18 have completed one of the doctoral programs.

ANNUAL REPORT

DEPARTMENT OF EPIDEMIOLOGY

July 1, 1969 - June 30, 1970

II. ORGANIZATION

A. FULL-TIME FACULTY

John C. Cassel, M.B.B.Ch., M.P.H., Professor and Chairman
Caroline Becker, M.D., Assistant Professor
Frank Cordle, M.P.H., Research Associate
Joan C. Cornoni, M.P.H., Ph.D., Instructor
John T. Fulton, D.D.S., Professor
Barbara S. Hulka, M.S., M.D., M.P.H., Assistant Professor
C. David Jenkins, M.A., Ph.D., Associate Professor
Berton H. Kaplan, M.S., Ph.D., Associate Professor
David Kleinbaum, Ph.D., Assistant Professor
Abdel R. Omran, M.D., D.P.H., M.P.H., Dr.P.H., Associate Professor
Ralph C. Patrick, Jr., A.M., Ph.D., Associate Professor
Philip S. Spiers, Ph.D., Assistant Professor
Cecil Slome, M.B., Ch.B., D.P.H., Associate Professor
Herman A. Tyroler, M.D., Professor
A. Wouter Voors, M.D., M.P.H., Dr.P.H., Assistant Professor
Stephen J. Zyzanski, M.S., Ph.D., Assistant Professor

B. PART-TIME FACULTY

Kitty Shimoni, M.D., M.P.H., Research Associate (October, 1969-
June, 1970)

C. VISITING FACULTY

Robert W. Buechley, M.A., M.P.H., Ph.D., Adjunct Assistant Pro-
fessor
John F. Finklea, M.D., Cert. in Trop. Med., Dr.P.H., Adjunct
Associate Professor
Curtis G. Hames, M.D., Visiting Associate Professor
Douglas I. Hammer, M.D., M.P.H., Adjunct Assistant Professor
Carl G. Hayes, M.P.H., Ph.D., Adjunct Assistant Professor
Siegfried Heyden, M.D., Priv. Docent, Adjunct Associate Professor
Michel A. Ibrahim, M.B.B.Ch., M.P.H., Ph.D., Adjunct Associate
Professor
Vaun A. Newill, M.D., Adjunct Associate Professor
Carl M. Shy, M.D., Dr.P.H., Adjunct Assistant Professor
Richard A. Tjalma, D.V.M., M.S. Adjunct Associate Professor
Carolyn A. Williams, M.S., Ph.D., Adjunct Assistant Professor
Joe D. Wray, M.D., M.P.H., Adjunct Associate Professor

D. JOINT APPOINTMENTS

Claude W. Drake, D.D.S., M.P.H., M.S., Assistant Professor

E. OTHER ACADEMIC PERSONNEL

Ruth Berry, R.N., Research Assistant
Jo E. Maready, B.A., Research Associate
E. J. Miller, B.A., Research Associate
Irvin Young, M.S., Graduate Assistant

V. INSTRUCTIONAL ACTIVITIES

During the current year, there have been 39 students majoring in the field of epidemiology. One of these students completed the requirements for the MSPH degree in February, 1970. Four students will complete the requirements for the MPH degree by August, 1970. One student will complete the requirements for the M.S. degree by August, 1970. One student will complete the work for the Dr.P.H. degree and will receive the degree in August, 1970. Two students will receive the Ph.D. degree in June, and another two in August, 1970. Five students have finished all course work for the Ph.D. degree, and are working on their dissertations.

Number of Courses Given.	20
Number of Majors in Department	39
MSPH	6
MPH.	7
MS	2
Dr.P.H..	7
Ph.D..	16
Non-Degree	1
Total Enrollment in Department Courses465

A. Enrollment of major students:

Fall, 1969 (5 MSPH, 7 MPH, 2 MS, 7 Dr.P.H., 15 Ph.D., 1 Non-Degree).	37
Spring, 1970 (5 MSPH, 7 MPH, 2 MS, 7 Dr.P.H., 16 Ph.D., 1 Non-Degree).	38
Summer, 1970 (estimated: 5 MSPH, 7 MPH, 2 MS, 6 Dr.P.H., 14 Ph.D., 1 Non-Degree).	35
Men (2 MSPH, 5 MPH, 2 MS, 6 Dr.P.H., 5 Ph.D.).	20
Women (4 MSPH, 2 MPH, 1 Dr.P.H., 11 Ph.D., 1 Non-Degree)	19
Undergraduate.	0
Graduate (6 MSPH, 7 MPH, 2 MS)	15
Doctoral (7 Dr.P.H., 16 Ph.D.)	23
Non-Degree	1

Place of Residence:

North Carolina14
Southern States.	7
Alabama	1
Kentucky.	1
Maryland.	1
Missouri.	2
Virginia.	2
Other States14
California.	2
Colorado.	1
Connecticut	1
Illinois.	1
Massachusetts	2
Montana	1
New Mexico.	1
New York.	2
Ohio.	2
Pennsylvania.	1
Other Countries.	4
Indonesia	1
Iran.	1
Thailand.	1
United Arab Republic.	1

Courses offered in the Department of Epidemiology and enrollment:

<u>Course Number</u>	<u>Title</u>	<u>Enrollment</u>
140	Problems in Epidemiology	24
141	Problems in Epidemiology	11
160	Principles of Epidemiology	171
161	Epidemiology in Population Dynamics and Family Planning Programs	23
162	Epidemiology in Environmental Health	41
168	Behavioral Science Measurement in Health Programs and Research	20
211	Determinants of Communicable Disease	8
260	Epidemiological Foundations for Disease Control Programs	11
261	Dental Epidemiology	6
262	Epidemiology of Program Acceptance	20
264	Culture and Health	23
265	History of Epidemiology	17
266	Epidemiological Investigation	23
287	Statistical Methods in Epidemiology	2
300	Seminar in Epidemiology	0
315	Field Training in Epidemiology	7
360	Research in Epidemiology	14
361	Research in Epidemiology	1
393	Masters Thesis	19
394	Doctoral Dissertation	32

B. Degrees estimated through August, 1970:

	Ph.D.	Dr.P.H.	M.S.	MPH	MSPH	TOTAL
January					1	1
June	2					2
August	2	1	1	5		9

C. Students receiving less than one semester's instruction from faculty:

<u>Name of Course</u>	<u>Hours of Instruction</u>	<u>Number of Students</u>
Nurse Evaluation Program	40	26
Comprehensive Health Planning	2	27
Principles of Public Health Dentistry	3	32
Communicable Disease Center and Continued Education Course in Epidemiology Investigation	12	20

D. Students outside the Department of Epidemiology taking courses especially set up for them by our faculty:

<u>Name of Course</u>	<u>Hours of Instruction</u>	<u>Number of Students</u>
PALP 238	15	12
Epidemiology for 2nd year Medical Students	6	65
EPID 162 for Environmental Science and Engineering Students	48	41
Public Health Nursing for 3rd year Nursing Students	4	60
Community Psychiatry Seminar for 4th year Residents	2	20
Preventive Medicine for 2nd year Medical Students	28	73
Preventive Dentistry	5	48
Department of Preventive Medicine for 2nd year Medical Students	8	80

E. Students from other universities receiving instruction set up for them at those universities:

<u>Name of Institution</u>	<u>Course or Class</u>	<u>Hours</u>	<u>Number of Students</u>
Duke University	3rd year Nursing	45	60
Duke University	4th year Nursing	45	60

E. (Continued)

<u>Name of Institution</u>	<u>Course or Class</u>	<u>Hours</u>	<u>Number of Students</u>
University of Kentucky, Department of Preventive Medicine	2nd year Medical Students	4	80
Duke University	Assistant's Physician Program	2	40

F. Students from other departments and schools in the University enrolled in regular Public Health courses in the School of Public Health:

<u>Course Number</u>	<u>Breakdown of Students</u>	<u>Hours</u>	<u>Number of Students</u>	<u>Total</u>
EPID 160	7-Graduate School 1-Library Science 3-N.C. State 1-Pharmacy	30	12	360
EPID 162	4-Graduate School	30	4	120
EPID 264	5-Graduate School	45	5	225
EPID 360	2-Graduate School	45	2	90
EPID 361	1-Graduate School	45	1	45
TOTAL		195	24	840

VI. DEPARTMENT ACTIVITIES IN THE GREATER UNIVERSITY

Dr. Cassel

Member of Advisory Board, Institute for Environmental Health Studies, University of North Carolina, 1968-Present
 Chairman, Committee on Group Biology, Medical School Curriculum Review, University of North Carolina, 1968-Present.

Dr. Becker

Member, Faculty Council.
 Member, Health Sciences Library Committee.

Dr. Cornoni

Member, Executive Committee of the Center for Alcohol Studies.

Dr. Hulka

Member, Faculty Council.

Dr. Kaplan

Member, Chancellor's Consultative Forum.
Director, Department of Mental Health-Law School Seminar Series on
Law and Social Ecology.

Dr. Tyroler

Principal Investigator, Research Program in Health Consequences of
Space Age Activities.
Member, Faculty Council.

VII. DEPARTMENTAL SERVICES

Dr. Cassel

Associate Editor, American Journal of Epidemiology.
Consultant, Division of Environmental Health Sciences, National En-
vironmental Health Sciences Center, 1966-Present.
Consultant, National Institute for Mental Health, 1965-Present.
Consultant, U.S. Public Health Service (Cooperative Drug Study in
Hypertensive Disease), 1967-Present.
Consultant, World Health Organization, 1966-Present.

Dr. Cornoni

Membership Committee, North Carolina Public Health Association.

Dr. Fulton

Member, National Public Health Training Council of the National In-
stitute of Health.

Dr. Jenkins

Appointed member of the Editorial Board of Psychosomatic Medicine,
the Journal of the American Psychosomatic Society.
Elected Delegate from the AHA Council on Epidemiology to the American
Heart Association Assembly.
Epidemiological and Psychological Consultant to the Western Collabor-
ative Group Study (Cardiovascular) and The Harold Brunn Institute,
Mount Zion Hospital and Medical Center, San Francisco.
Licensed as a Practicing Psychologist by North Carolina State Board
of Examiners of Practicing Psychologists (under new law).

Dr. Kaplan

Member, Research Advisory Committee of the American Nurses' Founda-
tion.

Dr. Omran

Member, Group of Writers in "Consequences of Population Change,"
for the National Academy of Science.

Dr. Tyroler

Chairman, Epidemiologic Panel of Consultants and Consultant to the
National Center for Health Services Research and Development,
U.S.P.H.S.
Epidemiologic Consultant, Member of the Board of Directors, Members
of the Executive Committee, North Carolina Regional Medical Program.
Task Force on Community Blood Pressure Intervention Studies, National
Regional Medical Program.
Member, Research Training Grants Committee, Community Health Services,
U.S.P.H.S.
Member, Health Services Research Training Grants Committee, U.S.P.H.S.
Member, Study Section on Records Linkage, National Center for Health
Statistics, U.S.P.H.S.
Member, Executive Committee, Society for Epidemiologic Research.
Member, International Epidemiological Association, Incorporated.
Consultant to Health Information System, D.I.H., Sells, Arizona.
Consultant OPSAM, Division Indian Health, U.S.P.H.S.
Consultant to the Director, Division of Occupational Health, N.A.S.A.
Consultant to Occupational Health Director of the New York Times.
Member, Community Service and Education Committee, North Carolina
American Heart Association.
Fellow, Council on Epidemiology and Member of Committee on Medical
Education, National American Heart Association.
Participant in creating the Orange-Chathan County Community Health
Program.

VIII. RESEARCH PROJECTS

Dr. Cassel

Cardiovascular Disease Epidemiology--Evans County
Health Consequences of Rapid Culture Change
Health Services Research

Mr. Cordle

Improvement of Primary Medical Care in a Teaching Institution.
AAGP Study of Primary Medical Care.

Dr. Cornoni

Evans County Heart Study.
Nursing Evaluation Program.
Cluster Analysis in Epidemiology

Dr. Hulka

Health Services Research
Cervical Cancer

Dr. Jenkins

Behavioral Science Consultant to National Tuberculosis Association for
Experimental Clinics Project.
Consultant, Western Collaborative Group Study and the Harold Brunn
Institute, San Francisco.
Principal Investigator, "Behavioral Factors in Coronary Heart Disease,"
funded by U.S.P.H.S.
Principal Investigator, "Psychological Factors in Coronary Heart
Disease Risk Factors," funded by the American Heart Association.

Dr. Kaplan

Sociologist, Evans County Study of Cardiovascular Diseases.
Study of a Comparison of Blacks and Whites in a Rural Southern Com-
munity.

Dr. Kleinbaum

Estimation and Hypothesis Testing for Generalized Multivariate Linear
Models.
Statistical Analysis, Evans County Heart Disease Project.

Dr. Omran

Near East Project.
Community Medicine.
Epidemiologic Transition.
Epidemiology of Abortion.
WHO Epidemiology Studies in Human Reproduction.
Radiation Effects and Mental Illness.

Dr. Slome

Prediction of Dropouts from School of Nursing.
Factors Associated with Chronic Inflammatory Intestinal Disease.
Mental Health of Students.

Dr. Spiers

Birth Interval and Stillbirth Rate.
Sex Ratio by Age in Childhood Malignancies.
The Distribution of Multiple Sclerosis in North Carolina.

Dr. Tyroler

Evans County Heart Study.
Epidemiology of Health Services Research.
Health Consequences of Industrialization.

Dr. Voors

Prevention and Control of Atomic Post-Attack Respiratory Disease Epidemics.
Water Chemistry and Atherosclerotic Heart Disease.

Dr. Zyzanski

Behavioral Factors in Coronary Heart Disease.
AAGP Study, Evaluation of Health Services.

IX. PUBLICATIONS

Dr. Cassel

(With A. Leighton.) "Epidemiology of Mental Health." Chapter 4, in Mental Health Considerations in Public Health, edited by Stephen E. Goldston, National Institute of Mental Health, PHS Pub. No. 1898, (May 1969).

"Nationwide Cerebrovascular Disease Study, (I-IV)," American Journal of Epidemiology, 90:6 (December 1969), 536-585.

(With J. P. Henry.) "Psychosocial Factors in Essential Hypertension-Recent Epidemiologic and Animal Experimental Evidence," American Journal of Epidemiology, 90:3 (1969), 171-200.

(With B. Hulka, S. J. Zyzanski, and S. J. Thompson.) "Scale for Measurement of Attitudes Toward Physicians and Primary Medical Care." Medical Care, 8 (May-June, 1970).

Dr. Cornoni

"The Use of a Cluster Analysis Method in an Epidemiologic Investigation." Unpublished Ph.D. Dissertation, University of North Carolina at Chapel Hill, 1970.

Dr. Hulka

"Screening for Cervical Cancer in Occupational Health Programs." (editorial.) Archives of Environmental Health, 20 (March 1970), 297-300.

(With A. W. Voors.) "Quantitative Evaluation of a Cervical Cytology Screening Program." American Journal of Epidemiology, 90:3 (September 1969), 214-223.

Dr. Jenkins

(With S. Zyzanski, C. G. Hames, R. H. Rosenman, and M. Friedman.) "Psychological Inventory." Psychosomatic Medicine, 31 (1969), 115-128.

Dr. Kleinbaum

"Estimation and Hypothesis Testing for Generalized Multivariate Linear Models." Unpublished Ph.D. dissertation, UNC Institute of Statistics Mimeo Series No. 696, University of North Carolina at Chapel Hill, 1970.

Dr. Slome

"Epidemiology--What's That?" A Teacher Guide for Using the Series in Public Health Science. Denton: Texas Woman's University, 1969. (Videotape).

"A Glimpse Into Reality." Ibid.

"A Case Is A Case." Ibid.

"The Way It Is." Ibid.

"Health Happenings Ahead." Ibid.

"'Associates' Can 'Cause' Happenings--Control Them" Ibid.

"We Need From Time to Time." Ibid.

Dr. Spiers

"Hodgkin's Disease in Workers in the Wood Industry." Public Health Reports, 84 (1969), 385.

(With L. H. Kuller, A. Bolker, M. S. Saslaw, B. L. Paegel, C. Sisk, J. A. Borhani, J. A. Wray, H. Anderson, D. Peterson, W. Winkelstein, Jr., J. Cassel, A. G. Robinson, H. Curry, A. M. Lilienfeld, and R. Seltser.) "I. Methods and Analysis of Death Certificates." American Journal of Epidemiology, 90 (1969), 536-544.

(With L. H. Kuller, et al.) "II. Comparison of Clinical Records and Death Certificates." Ibid., 545-555.

(With L. H. Kuller, et al.) "III. Accuracy of the Clinical Diagnosis of Cerebrovascular Disease." Ibid., 556-566.

(With L. H. Kuller, et al.) "IV. Comparison of the Different Clinical Types of Cerebrovascular Disease." Ibid., 567-578.

Dr. Voors

(With B. S. Hulka.) "Quantitative Evaluation of a Cervical Cytology Screening Program." American Journal of Epidemiology, 90:3 (1969), 214-223.

"Does Lithium Depletion Cause Atherosclerotic Heart Disease?" Lancet, 2 (1969), 1337-1339.

(With D. R. Johnston, M. E. Fogel and E. L. Hill.) Postattack Prevention and Control of Enteric Diseases. Research Triangle Institute Final Report R-OU-406. Raleigh (North Carolina): Research Triangle Park, 1969.

(With G. T. Stewart.) "Is Disability in Marine Recruits Associated With the Instructing Personnel?" American Journal of Epidemiology, 89:3 (1970), 273-277.

"Lithium Content of Drinking Water and Ischemic Heart Disease." New England Journal of Medicine, 281 (December 1969), 1132-1133.

Dr. Zyzanski

(With C. D. Jenkins, C. G. Hames, R. H. Rosenman, and M. Friedman.) "Psychological Inventory." Psychosomatic Medicine, 31 (1969), 115-128.

(With B. Hulka, J. Cassel, and S. Thompson.) "Scale for Measurement of Attitudes Toward Physicians and Primary Medical Care." Medical Care, 8 (1970).

X. SCIENTIFIC PAPERS PRESENTED

Dr. Becker

"Current Status of Food Handler Examinations in State and Local Health Departments." Paper presented at the American Public Health Association Meetings, November 12, 1969.

Dr. Hulka

"Natural History of Cervical Atypias." Paper presented at a seminar at Johns Hopkins University, Baltimore, Maryland, February 21, 1970.

"UNC and a Role in Community Medicine." Paper presented at a panel discussion at the University of Mississippi, Jackson, Mississippi, March 31, 1970.

"Scale for the Measurement of Attitudes Toward Physicians and Primary Medical Care." Paper presented at the School of Nursing, University of North Carolina at Chapel Hill, April 13, 1970.

Dr. Jenkins

(With S. Zyzanski, R. H. Rosenman, and M. Friedman.) "Epidemiologic Study of Cigarette Smokers and Non-Smokers." Paper presented at the American Heart Association Conference, Dallas, Texas, November 4, 1969.

Dr. Zyzanski

(With C. D. Jenkins, R. H. Rosenman, and M. Friedman.) "Epidemiologic Study of Cigarette Smokers and Non-Smokers." Paper presented at the American Heart Association Conference, Dallas, Texas, November 4, 1969.

XI. FULL-TIME FACULTY APPOINTMENTS AND RESIGNATIONS

Appointments:

David G. Kleinbaum, Ph.D., Research Associate, November 1, 1969.

Promotion:

Joan C. Cornoni, Ph.D., Assistant Professor, June 1, 1970.

Retirement:

Evelyn L. Anderson, Research Associate, April 31, 1970.

XII. NEEDS AND DIRECTION OF DEVELOPMENT

Space for expanding programs continues to be a major need, although the use of rental space in Spring 1970 has allowed commitment to the on-going projects to progress.

The three areas which are anticipated to develop most in the coming years are environmental epidemiology, health services research, and the multi-disciplinary approach to the modern health problems of population increase, cardiovascular diseases, and cancer

Environmental epidemiology has attracted the interest and utilized the talents of resource personnel in the National Air Pollution Center, four of whom hold adjunct positions in the Department. Appropriate wet-laboratory space is being developed for the program in environmental epidemiology. There are currently four people in the two-year master's program which began September 1969.

Health Services Research will continue to expand, both in conjunction with the Health Services Research Center, the Regional Medical Program, and the American Academy of General Practice, and in special projects.

The development of the Data Processing Laboratory has influenced the nature and sophistication of the analytic tools available. This will be particularly apparent as the on-going projects progress and as the 1970 Census Data Bank becomes available.