

ANNUAL REPORT

DEPARTMENT OF EPIDEMIOLOGY

July 1, 1967 - June 30, 1968

Highlights of the Year

The Department has become increasingly involved in Health Services Research. In particular, members of the Department have played key roles in three areas of such activity: The Regional Medical Program; the American Academy of General Practice Study; and the Health Services Research Center Application.

Finding difficulties has delayed the development of the International Health program, and unfortunately there has been no progress there.

Collaboration and consultative services with local, State, National and International institutions and agencies continues as reported in last year's annual report.

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DEPARTMENT OF EPIDEMIOLOGY

July 1, 1967 - June 30, 1968

I. ORGANIZATIONA. FULL-TIME FACULTY

Evelyn Anderson, M.P.H., Research Associate
Caroline Becker, M.D., Assistant Professor
Richard A. Carter, M.D., M.P.H., Assistant Professor
John Cassel, M.B.B.Ch., M.P.H., Professor and Chairman
Joan C. Cornoni, M.P.H., Instructor
John T. Fulton, D.D.S., Professor
Barbara Hulka, M.D., M.P.H., Assistant Professor
C. David Jenkins, Ph.D., Associate Professor
Berton H. Kaplan, Ph.D., Associate Professor (Sociology)
Sidney L. Kark, M.D., Visiting Professor
Edward G. McGavran, M.D., M.P.H., Sc.D., Professor
Abdel R. Omran, M.B.B.Ch., Associate Professor
Ralph Patrick, Ph.D., Associate Professor (Anthropology)
Cecil Slome, M.D., Associate Professor
Gordon T. Stewart, M.D., Professor
Herman A. Tryoler, M.D., Professor
A. Wouter Voors, M.D., Dr.P.H., Assistant Professor

B. PART-TIME FACULTY

Capt. James H. Boyers, Adjunct Associate Professor
Dr. Hilliard Estes, Adjunct Associate Professor
Dr. Curtis Hames, Adjunct Associate Professor
Dr. Siegfried Heyden, Adjunct Associate Professor
Dr. David H. Stoddard, Adjunct Associate Professor
Dr. Joe Wray, Adjunct Associate Professor

C. OTHER FULL-TIME PERSONNEL

Jerry Allsbrook, Laboratory Technician
Carol Blanton, Secretary
Brian Butcher, Laboratory Technician

George Christopherson, Research Associate
Lindsay Cleveland, Research Associate
Linda Coats, Clerk
Joan Curtis, Research Associate
H. Max Drake, Research Associate
Ann Farthing, Secretary
Wendy AM French, Secretary
Marilyn Goodman, Research Associate
Jo Maready, Research Associate
Gloria Martin, Key Punch Operator
Kathy McNulty, Secretary
Edward Miller, Research Associate
Harriet Miller, Research Associate
Lilly Oey, Research Associate
Sandra Saaed, Research Associate
Philip Spiers, Research Associate
Abbie-Ann Steele, Secretary
Lucille Thompson, Secretary
Lucille Turner, Laboratory Assistant
Judy Venning, Clerk
Betty L. Warren, Secretary
Stephen Zyzanski, Research Associate

D. OTHER PART-TIME PERSONNEL

Richard Ballew, Research Assistant
Julia Barber, Research Assistant
James Beck, Research Associate
Ken Bullington, Lab Helper
Margaret Cole, Graduate Assistant
Roberta Counihan, Research Associate
Steve Gray, Lab Helper
Harriet Hendon, Research Associate
Harriet Herrin, Research Assistant
Mary Impastato, Research Assistant
James Kelly, Research Assistant
Violet Krall, Secretary
Kathy Neilson, Coder
Kenneth Rich, Research Assistant
Jane Sprague, Research Associate
Priscilla Sutcliffe, Research Associate
Gail Van Wie, Research Associate
Nancy Ward, Secretary
William Weems, Lab Helper

II. BUDGETS AND GRANTS

<u>SOURCE</u>	<u>PERSONNEL</u>	<u>FELLOW- SHIPS</u>	<u>NON- SALARY</u>	<u>RESEARCH AND/OR TRAINING</u>	<u>OVER- HEAD</u>	<u>TOTAL</u>
Eli Lilly	\$ 7,480		2,520	Research	1,000	11,000
U.S. Navy	21,705		3,989	Research	3,731	29,425
AAGP	34,500		14,260	Research	9,040	57,800
NASA	24,000		9,873	Research	7,440	41,313
Russel Sage	2,400		600	Research		3,000
Peace Corps			7,288	Research	4,105	11,393
USPHS	39,737	28,658	3,900	Training	5,495	77,790
USPHS	32,054	29,346	1,000	Training	4,704	67,104
USPHS	18,735		6,356	Research	5,983	31,074
USPHS	21,114		6,784	Research	5,580	33,478
USPHS	2,250	11,640	5,520	Training	753	20,163
USPHS	44,450	14,100	9,445	Training	5,200	73,195
USPHS	13,680		2,820	Training	1,320	17,820
RTI	8,065			Res.&Tng.		8,065
UNIV.	60,391		3,900	Teaching		64,291
PHODES	56,348		12,800	Res.& Tng.		69,148
GEN. RES.	17,695			Research		17,695
TOTAL	\$404,604	83,744	91,597		54,351	633,754

SUMMARYTOTAL FUNDS

Univ. Funds	\$64,833
Phodes Funds	69,148
General Research	17,695
Dept. Grants	482,078

III. PHYSICAL FACILITIES

Since the last Annual Report the space situation, if anything, has deteriorated. New faculty appointments have necessitated subdividing the student space for secretarial and faculty usage, and as many as three faculty members now have to share office space.

IV. INSTRUCTIONAL ACTIVITIES

During the current year there have been twenty-one students majoring in the field of Epidemiology. One of these students will complete the requirements for the degree of Master of Public Health by June, 1968, and six by August, 1968. Four have completed their work for the Ph.D. and will receive the degree in August, 1968. Five have finished all course work for the Ph.D. and are working on their dissertations. Four of our students are taking advanced course work.

Departmental Instructional Program in the School of Public Health

<u>COURSE</u>	<u>NUMBER OF STUDENTS</u>
EPID 140 - PROBLEMS IN EPIDEMIOLOGY	20
EPID 141 - PROBLEMS IN EPIDEMIOLOGY	1
EPID 160 - PRINCIPLES OF EPIDEMIOLOGY	187
EPID 168 - BEHAVIORAL SCIENCE MEASUREMENT	8
EPID 211 - EPIDEMIOLOGY OF COMMUNITY DISEASE	9
EPID 261 - DENTAL EPIDEMIOLOGY	7
EPID 262 - EPIDEMIOLOGY IN PUBLIC HEALTH FAMILY PRACTICE	32
EPID 264 - CULTURE AND HEALTH	27
EPID 265 - HISTORY OF EPIDEMIOLOGY	12
EPID 266 - EPIDEMIOLOGICAL INVESTIGATION	23
EPID 360 - RESEARCH IN EPIDEMIOLOGY	7

Students receiving less than one semester's instruction from the School of Public Health Faculty:

A one week short course, "Application of Epidemiological Methods to Program Evaluation," was given to 30 trainees from three Public Health Service Regions, for a total of 40 hours of instruction.

Course Teaching Outside the Department

Courses taught in other departments and school os the University which have been set up for them:

Administration - Dr. John Fulton taught HADM 230 to seven students for 2 hours per week.

Anthropology - Dr. Ralph Patrick taught ANTH 41, General Anthropology to 112 students for 3 hours per week.

Dental School - Dr. John Fulton taught Preventive Dentistry 112, a 6-hour course given to 50 first year dental students.

Medical School - Dr. Barbara Hulka taught an Epidemiology course in Preventive Medicine to 20 students and gave one lecture to 80 students.

- Dr. Gordon Stewart gave one lecture in the Department of Pediatrics, to 35 students, two lectures in the Department of Medicine to 25 students, two lectures in the Department of Pathology to 100 students for two hours per week, and was supervisor of the residency program in the Department of Bacteriology.

- Dr. Herman Tyroler gave one lecture for the Department of Preventive Medicine to 75 students.

Nutrition - Dr. Ralph Patrick taught NUTR 240, Family Dietary Practices to 6 students three times a week.

Parasitology - Dr. Caroline Becker taught one half of PARA 237 (5), Public Health Laboratory Methods I to nine students for a total of 15 lectures once a week, and 15 three hour per week labs.

Community Psychiatry- Dr. Herman Tyroler gave eight lectures on Epidemiology in Community Psychiatry to 10 students.

City and Regional

Planning

- Dr. Herman Tyroler gave one lecture for the Department of City and Regional Planning to 30 students.

Teaching at other Universities in courses set up for the students at those Universities:

Harvard - Dr. Ralph Patrick was a visiting lecturer for the summer of 1967 at the Harvard School of Public Health.

Course Teaching Outside the Department

Courses taught in other departments and school of the University which have been set up for them:

- | | |
|----------------------------|--|
| Administration | - Dr. John Fulton taught HADM 230 to 7 students for 2 hours per week. |
| Anthropology | - Dr. Ralph Patrick taught ANTH 41, General Anthropology to 112 students for 3 hours per week. |
| City and Regional Planning | - Dr. Herman Tyroler gave one lecture for the Department of City and Regional Planning to 30 students. |
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| | - Dr. Herman Tyroler gave one lecture for the Department of Preventive Medicine to 75 students. |

Nutrition

- Dr. Ralph Patrick taught NUTR 240, Family Dietary Practices to 112 students three times per week.

Parasitology

- Dr. Caroline Becker taught one half of PARA 237 (5), Public Health Laboratory Methods I to 9 students for 15 one hour lectures and 15 three hour labs.

Teaching at other Universities in courses set up for the students at those Universities:

Harvard - Dr. Ralph Patrick was a visiting lecturer for the summer of 1967 at the Harvard School of Public Health

Duke - Dr. Cecil Slome taught NURS 155, Community Health and Social Forces, at the Duke School of Nursing to 55 students three times per week.

University
of Calif-
ornia at
Los

Angeles - Dr. Gordon Stewart taught a one week summer course on biophysics to 30 students six times per week.

- Dr. David Jenkins gave a lecture seminar on May 21, 1968.

Instruction given to students from other departments and schools in this University enrolled in regular public health courses in the School of Public Health:

Dental School Dr. John Fulton gave EPID 261 for 7 graduate students two times per week.

Medical Anthropology-Dr. Berton Kaplan gave EPID 140, Observational Methods for a Medical Anthropology Student to six students three times per week.

Dr. Ralph Patrick gave EPID 140, Observational Methods for a Medical Anthropology Student to six students three times per week.

Medical School - Dr. Gordon Stewart gave instruction to Microbiology doctoral students to 25 students twice a week.

Biostatistics - Dr. David Jenkins gave EPID 140 instruction to 1 student for 3 hours per week.

In addition to the above listed courses, the faculty of the Department of Epidemiology gave a number of single lectures in courses taught by other departments in the School of Public Health.

A few of these are listed below:

Public Health Nursing - Dr. Berton gave a lecture in the Department of Public Health Nursing Seminar to 10 students once a week.

Administration - Dr. Abdel Omran gave four lectures in HADM 201 to 30 students four times a week.

All of the faculty act as advisors to students who are working on Masters theses or doctoral dissertations.

Total number of different students (other than School of Public Health) under instruction.

Administration	62 students	8 hrs. inst.
Anthropology	112 students	3 hrs. inst.
Biostatistics	1 student	3 hrs. inst.
City and Regional Planning	30 students	1 hr. inst.
Community Psychiatry	10 students	8 hrs. inst.
Dental School	57 students	8 hrs. inst.
Duke University	55 students	3 hrs. inst.
Medical Anthropology	12 students	6 hrs. inst.
Medical School	337 students	33 hrs. inst.
Nutrition	6 students	3 hrs. inst.
Parasitology	9 students	4 hrs. inst.
Public Health Nursing	10 students	1 hr. inst.
Tulane University	36 students	2 hr inst.
University of California at Los Angeles	30 students	6 hrs. inst.

V. SCHOOL ACTIVITIES IN THE GREATER UNIVERSITY

- Dr. Becker Member - Library Committee of the Division of Health Sciences
- Chairman - Library - Reading Room Committee of the School of Public Health
- Member - Human Research Review Committee of the School of Public Health
- Dr. Cassel Member - Advisory Board - Institute of Environmental Health Studies
- Member - Advisory Board - Committee Division of Education and Research in Community Medical Care.
- Chairman, Committee on Group Biology, Medical School Curriculum Review
- Chairman, Institute for Environmental Health Studies Search Committee
- UNC - Faculty Council
- Executive Faculty - School of Public Health
- Dr. Kaplan Member - University Committee to Study the Social Sciences
- Dr. Slome Ad hoc subcommittee on training of non-health prepared students.
- Dr. Stewart Member - Dental Research Board
- Member - Cancer Institute Grants Committee
- School of Public Health: Physical Facilities Committee
Shop Committee
- N.C.M.H.: Hospital Infections Committee
- School of Medicine: Preventive Medicine Curriculum Committee (Chairman)
- Dr. Tyroler North Carolina Regional Medical Program Institutional Representative for the School of Public Health
- Member - Administrative Board, Sch. P.H.
- Co-director - Preventive Medicine residency training program
- Director - Chronic diseases training program

VI. SERVICES TO STATE AND NATION

- Dr. Cassel Member - Epidemiology and Disease Control
Study Section
- Consultant - National Institute of Mental Health
- Member - Committee on Teaching of Epidemiology
of the Epid. Section of the APHA
- Association Representative (APHA) to National
Academy of Sciences - National Research Council
- Associate Editor - American Journal of Epidemiology
- Member - Advisory Board, U.S. Public Health
Service Cooperative Drug Study
- Member - Survey Planning Committee, of National
Nutrition Survey, PHS
- Consultant - Division of Environmental Health
Sciences, National Environmental Health Sciences
Center
- Member - Society for Epidemiology Research
- Dr. Fulton Member - National Advisory Health Training Council
- Consultant to Div. of Dental Public Health, USPHS
- Dr. Jenkins Served on two site visits for NIH
- Consultant to National Tuberculosis and
Respiratory Disease Association
- Consultant to Western Collaborative Group Study
(cardiovascular epidemiology)
- Dr. Patrick Alabama Dept. of Health, Nursing Workshop. Feb. 1968
- Univ. of Georgia, Nutrition Education Workshop
June 1968
- Dr. Slome Subcommittee on Indian health statistics
- Consultant to National Center for Health Statistics
- Consultant to Nursing Division, PHS

Dr. Stewart Member of Committee - American Society for
Microbiology

Member of Committee - American Academy of Allergy

Speaker and Discussant - American Academy of
Pediatrics

Speaker and Discussant - American College of
Allergists

Speaker and Discussant - Univ. of Southern California

-Various Medical Societies-

Consultant - Duke University

Consultant - University of Missouri

Consultant - Research Triangle Institute

Consultant - Briston-Myers Company

Consultant - Dupont Laboratories

Dr. Tyroler Member - Executive Committee and Board of
Directors, N. C. Regional Medical Program

Member - USPHS Health Research Training Grants
Committee

Member - National Center for Health Statistics
Committee on Record Linkage

Consultant to occupational medical directors
NASA and The New York Times

Consultant to Division of Indian Health Project
OPSAM

Member - Board of Directors, Southeast Public
Health Foundation

Dr. Voors Various consultations to Research Triangle
Institute

VII. RESEARCH PROJECTS

Inactivation of Viruses in Food: Effect of Pasteurization Processes on Inactivation of Adenovirus in Milk

Inactivation of Adenovirus by Monochloramine

Survey of Laws and Regulations Concerning Food Handlers

NASA

Malawi

Evans County Heart Study

Study of the Association between Family Size and the Health of the Family

Physical Anthropology of the Negroes of Charleston, S.C.

Use of Stress Scale with Mental Hospital Patients

Food Intake Patterns of Denture Candidates

Food Patterns of Denture Candidates

Fluoride Supplements for Elementary School Children

Study on the Delivery and Assessment of Primary Health Care

Epidemiology of Cervical Cancer

Development and validation of a psychological test to predict risk of coronary heart disease

Epidemiological and psychological studies of coronary heart disease

Epidemiological and psychological studies of elevation in serum lipids and other cardiovascular risk factors.

Quantification of influence of social and psychological factors on control of diabetes

Studies of demographic, social and psychological influences on morbidity in military populations

Measurement of public beliefs and feelings about diseases

Studies aimed at improving public response to health programs

"Psch. Dis. and Urban Environment" editing with Leighton, Murphy, Freidberg, to be published by Columbia U. Press, Fall, 1968.

Admin. Science Quart. Special issue on "Development Bureaucracy" fall, 1968

Epidemiologic Transition

U.A.R. Book

Chronic Radiation Injury

Wake County fertility study

Programmed introduction to Behavioral Sciences, jointly with Dept. of Behavioral Sciences, Harvard School of Public Health

Epidemiology of blood pressure in school children

Epidemiology of mental health in university students

Penicillin Allergy (a) Departmental
(b) American Academy of Allergy

Hospital Infection Study, N. C. Memorial Hospital

Illness in Marine and Naval Recruits (with Naval Medical Research Units at Camp Lejeune, N. C. and Great Lakes, Ill.)

Liquid Crystals (with Materials Research Center, U.N.C.)

Evans County Cardiovascular Survey

Charleston County Cardiovascular Survey

Epidemiologic Studies of Occupational Health, NASA

Research Triangle Institute

Hospital Cross-infection

Naval Medical Research Camp Lejeune, N. C.

VIII. PUBLICATIONS

- Dr. Cassel "Epidemiology and Mental Health," by John Cassel and Alexander Leighton, in Press.
- "The Epidemiology of Non-Communicable Diseases." World Health Organization Report on "The Education and Training of Environmental Health Engineers." In press.
- Use of Vital and Health Records in Epidemiologic Research. A Report of the U.S. National Committee on Vital and Health Statistics, National Center for Health Statistics, Series 4, No. 7, Dept. of HEW, PHS. (Contributor), 1968
- Dr. Hulka "Atypical Cervical Cytology and its Relationship to Trichomoniasis Therapy: A Double Blind Study," American Journal of Obstetrics and Gynecology, 98:2, pp. 180-187, May 15, 1967.
- "Cytological and Histological Outcome Following an Atypical Cervical Smear," American Journal of Obstetrics and Gynecology, May 15, 1968, 101:2 pp. 190-199.
- Dr. Jenkins "The semantic differential for health: A technique for measuring beliefs about diseases," International Journal of Health Education. (Geneva) Vol. X, No. 3, 1967, 132-140.
- Rosenman, R. H., Friedman, M., Jenkins, C. D. and Bortner, R. W. "Is there a coronary-prone personality?" International Journal of Psychiatry, 5, 427-429 (May) 1968.
- Dr. Kaplan Kaplan and Goethals, Peter. "Medical Anthropology at the UNC." Essays in Medical Anthropology. edited by Thomas Weaver, Southern Anthropological Proceeding #1, 1968, pp. 55-66.
- "A Personal Note on the Natural History of a Law and Social Science Program" Research Previews Vol. 15 (April, 1968), pp. 48-53.
- Book Review in the N. C. Law Review, fall, 1967, On Agression, by Conrad Lorenz.

- Dr. Omran Bolivia, a book published by the Research Institute for the Study of Man.
- Dr. Slome Project Television film on Epidemiology for Nurses.
- Dr. Stewart "Biologic Stability of the Cephalosporin Molecule," Proceedings of the International Congress for Chemotherapy, Vienna, Austria (1967).
- "Hypersensitivity and Toxicity of the B-lactam Antibiotics," Post Graduate Medical Journal (Supplement) Vol. 43, p. 31. (August, 1967).
- "Macromolecular Residues Contributing to the Allergenicity of Penicillins and Cephalosporins," In Antimicrobial Agents and Chemotherapy (1967).
- "Allergenic Factors in Penicillins and Cephalosporins," American Heart Journal, 75(3):429, 1968.
- "Clinical and Epidemiologic Impact of Penicillins Old and New," Pediatric Clinics of North America, Vol. 15, No. 1, p. 13. (February, 1968.)
- Voors, A. W. and Stewart, G. T. "Biomathematical Analysis of Mycoplasma Infection in Marine Recruits," American Review of Respiratory Disease, 97:515 (1968).
- Voors, A. W. and Stewart, G. T. "Statistical Analysis of Staphylococcal Infection in Hospital Patients in Relation to Use of Antibiotics and Other Factors," Journal of Hygiene, Cambridge, 64:507-515 (1968).
- Dr. Tyroler "Epidemiology and Planning for the North Carolina Regional Medical Program," American Journal of Public Health, June, 1968.
- Dr. Voors "Preliminary Input Data to the Disease and Chronic Conditions Phase of the Total Emergency Health Care System Model," Research Triangle Institute Research Memorandum, Research Triangle Park, North Carolina, Volume OU-332-5 (1967).
- "Epidemiological Considerations for the Prevention of Post Nuclear Attack Epidemics," Research Triangle Institute Research Memorandum, Research Triangle Park, North Carolina, Volume OU-332-4 (1967).
- "A Computer Application of Knox's Test of Clustering," Institute of Statistics Mimeo Series No. 564, University of North Carolina (1968).

Voors, A. W. and Stewart, G. T. "Biomathematical Analysis of Mycoplasma Infection in Marine Recruits," American Review of Respiratory Disease, 97:515 (1968).

Voors, A. W. and Stewart, G. T. "Statistical Analysis of Staphylococcal Infection in Hospital Patients in Relation to Use of Antibiotics and Other Factors," Journal Hyg. Camb., 64:507-515 (1968).

IX. SCIENTIFIC PAPERS PRESENTED

- Dr. Cassel "Outline of Requirements for Scientific Public Health Practice," Public Health Nursing Section of Mississippi Health Department, Jackson, Mississippi, November 29-December 1, 1967.
- "The Epidemiology of Diabetes Mellitus," Bluefield, West Virginia, West Virginia State Medical Society, November, 1967.
- "Preparation of Faculty for Training Programs in International Health," Southeast Regional Conference of Professional Schools and World Affairs, Charlotte, North Carolina, February, 1968.
- "Health Consequences of Urbanism," American Anthropological Association, Washington, D. C., December, 1967.
- Dr. Fulton "Dental Manpower in North Carolina," presented to the State Planning Committee for Dentistry.
- Dr. Jenkins "Behavioral Science Measures: Their Contribution to Understanding the Onset and Course of Chronic Disease," Part of symposium: "Behavioral Factors in Chronic Disease Control," Presented at the American Public Health Association, Miami Beach, October 25, 1967.
- Dr. Kaplan "Observations on the Teaching of Law and Social Psychiatry," Presented at the Southern Sociological Society Meetings, April, 1968.
- Dr. Stewart At International Chemotherapy Conference, Vienna (also acted as sessional chairman), July, 1967.
- Lecture at University of Bern, Switzerland, July, 1967.
- At University of Southern California, Los Angeles, August, 1967.

At University of London (Royal Northern Hospital),
October, 1967.

At Interscience Conference on Antimicrobial Agents
and Chemotherapy, October, 1967.

Society for Epidemiologic Research (with A. W. Voors),
May, 1968.

Dr. Tyroler "Epidemiology and Planning for the North Carolina
Regional Medical Program," Presented at the annual
meeting of the American Public Health Association,
October, 1967.

Dr. Voors "Biostatistical Analysis of Mycoplasmal Infection in
Marine Recruits," Presented at the Society for Epi-
demiological Research Annual Meeting, Washington, D. C.,
May 10, 1968.

XI. NEEDS AND DIRECTION OF DEVELOPMENT OF THE DEPARTMENT

These remain essentially unchanged from last year, with the question of funding being immeasurably complicated by the current fiscal problems in Washington.

X. FULL-TIME FACULTY APPOINTMENTS, PROMOTIONS, RESIGNATIONS, LEAVES OF ABSENCE

A. Appointments: Richard A. Carter, M.D., M.P.H., Assistant Professor in Epidemiology. (September, 1967)

Barbara S. Hulka, M.D., M.P.H., Assistant Professor in Epidemiology. (September, 1967)

Sidney L. Kark, M.D., Visiting Professor. (November, 1967 - April, 1968)

B. Promotions: A. Wouter Voors, Assistant Professor in Epidemiology. (September 1, 1967)