

Telecon 6-2-74 B.F. 9375 follow up

B.F. Goodrich

6-14-74

TCA Final Report

B.11 Gaffney - TCA

J. Nelson Katzman

B. Scott Zaidi

Zwickler Schaefer

Johanson Bunker

Shanley Wilson

US pop not adj for observed age distribution
at Louisville for large group

Did not use SNR in large Louis. group
because for large group did not trace
terminations for large group

MCA study invalid to the extent that
there was not a precise definition
of the population. In Louisville we
included all plant workers - 14,000 or so. Other
complexes included only VCM or PVC workers

Follow up of terminated res

1) retail credit

2) Direct mail

3) now going to run SSth

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PRINTED IN U.S.A.

B.F. Goodrich

Angio - time dependent
Brain CA - exposure dependent
vascular lesions - intensity exposure dependent

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R. W. Strassburg
M. N. Johnson
A. Vittone
R. D. Scott
J. L. Nelson
W. J. Wilcox
A. M. Fairlie
R. M. Bowles
B. M. G. Zwicker
E. B. Katzenmeyer, Jr.

June 10, 1974

TABERSHAW/COOPER ASSOCIATES
Visit - Friday, June 14, '74

Please be informed that Dr. Gaffey of TCA will meet with us
for an in-depth review of their recent B. F. Goodrich
Epidemiological Study in Conference Room 1-A at 8:30 A.M.

The guest diningroom has been reserved for 11:30 A.M. We
will plan to go through the line.

Attached

Xerox copies of the pertinent tables and TCA conclusions
will be available for everyone attending this meeting. These
will be distributed prior to the meeting for your perusal
beforehand.

/ksc

Karla Carroll
for B. M. G. Zwicker

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April 12, 1974

W. J. Wilcox

Sorry to have missed you on Friday. Here is a copy of the Tabershaw-Informatics proposal for a Requirements Analysis Study. Please let me know your feelings regarding this, Monday, April 15 if possible, so that I may present a synopsis of viewpoints to Roger Strassburg.

Tim Stevens

TES/ss

Attachment

PROPOSAL TO PERFORM
A REQUIREMENTS ANALYSIS
FOR AN
OCCUPATIONAL HEALTH
SURVEILLANCE SYSTEM (OHSS)

April, 1974

Prepared for:

B. F. GOODRICH COMPANY
500 South Main Street
Akron, Ohio 44318

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tabershaw/cooper associates inc.

2180 Milvia Street, Berkeley, California 94704. Telephone (415) 845-3355



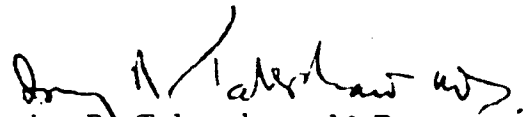
April 5, 1974

B. F. Goodrich Company
500 South Main Street
Akron, Ohio 44318

Dear Sirs:

TCA/Informatics are pleased to submit a proposal concerning the performance of a Requirements Analysis for an Occupational Health Surveillance System pursuant to our recent conversations.

Sincerely,


Irving R. Tabershaw, M.D.
President

ACCEPTED:

B. F. Goodrich Company

Date

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SECTION I

UNDERSTANDING OF THE PROBLEM

The purpose of this proposal is to present an approach to carry out a Requirements Analysis (Phase 0) for a corporate-wide Occupational Health Surveillance System (OHSS). The general system development scheme in this proposal is designed to accomplish Phase 0 within a 3-months period.

It has become increasingly apparent in the course of TCA's health support and consulting activities for B. F. Goodrich that the development of an OHSS would help fulfill the company's needs regarding its health services. The development of such a system would change B. F. Goodrich's occupational health activities from a relatively passive, retrospective, and emergency response orientation to one of continuous surveillance and analysis, and would emphasize the prevention of disease, the maintenance of health, and the anticipation of work-related health problems rather than correction of such problems after the fact.

An effective occupational health surveillance system would accomplish the following:

1. Effective job placement through coordination of pre-placement and periodic medical examination with job requirements and environmental exposures.
2. Assist in proper organization and functioning of the medical program, industrial hygiene activities, and the administration of health-related insurance programs (Workmen's compensation and group health).
3. Assist in determining proper health standards for workers exposed to potential toxic agents.

4. Assist in the prevention of non-occupational health problems and provide a follow-up system on those workers with disability.

5. Assist in the treatment of injured or ill workers by proper follow-up, rehabilitation, and replacement on the job.

6. Assist B. F. Goodrich in meeting the legal and statutory requirements regarding health of workers on a federal, state, and local basis.

In addition, two further objectives which must be incorporated into the Occupational Health Surveillance System for B. F. Goodrich are:

1. Continuing evaluation and improvement of the OHSS program; and

2. Be certain that confidentiality of medical information is maintained.

An effective OHSS will obtain information with reasonable facility and accuracy, will yield information justifying the cost and inconveniences of such a system, and will be a tool for making certain that the information generated is considered in the conduct of B. F. Goodrich operations.

TCA/Informatics has carefully structured its approach to this development effort in order to provide B. F. Goodrich management with logical control points in the development process. During each phase, as more is known about the system's parameters and operating characteristics, decisions can be made to expand, contract, or modify as appropriate.

operational environment requiring system maintenance.

Our preliminary analysis, based upon TCA's experience with B. F. Goodrich and also upon TCA's and Informatics' performance of past related efforts, discloses the overall relationships expressed in Figure 1.

The principal points expressed in the overview are that the major system components fall into three distinct areas which are quite different in nature. These being the maintenance of profiles in areas essential to occupational health surveillance; tools for analysis; and technical information, essentially from exterior sources, which includes not only literature but also data.

o Phase 0 Requirements Analysis

Determines in detail the objectives or requirements of the system, feasible approaches for developing such a system, and integration within the current operating environment.

o Phase I Design

A detailed definition of the system's components reflected in design specifications.

o Phase II Development

Actual production of computer programs, operating manuals, data collection instruments, input definition, and all other products or services needed for system operation.

o Phase III Test and Evaluation

The full-scale operation of the total system in a "test" environment. This phase is differentiated from the testing of individual system components (i. e., computer programs) during the development phase. The emphasis here is on total system test and evaluation.

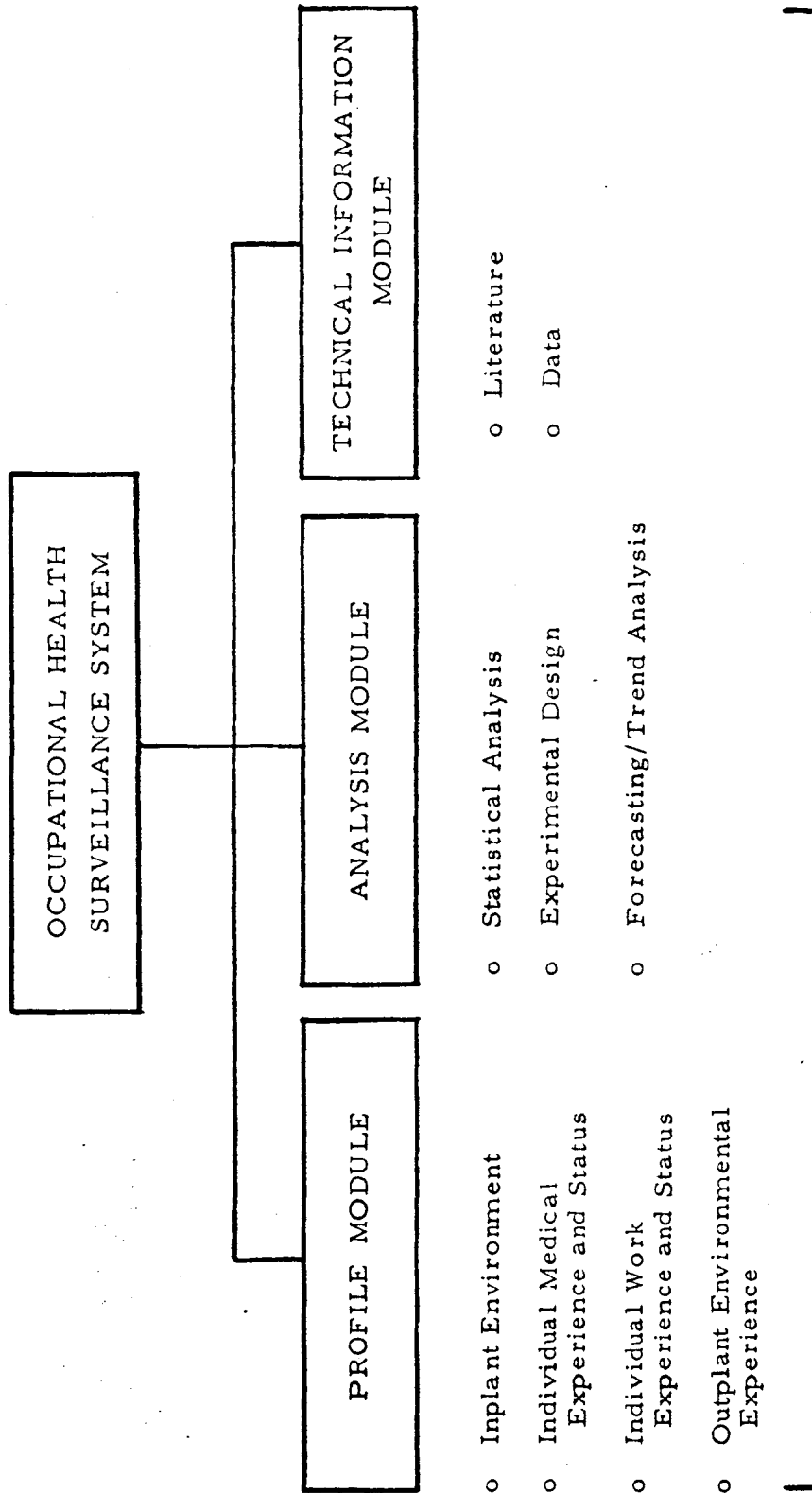
o Phase IV Implementation and Operation

System "start-up" within the operating environment and actual operation of the system.

o Phase V System Maintenance

A continual process of change takes place in any

B. F. GOODRICH



OPERATING ENVIRONMENT - IBM 360-65

Figure 1. OHSS OVERVIEW

SECTION II

WORK PLAN AND DELIVERABLES

As previously discussed, this proposal is concerned with the performance of a Requirements Analysis, or Phase 0, of the process described in the previous section.

Figure 2 portrays a general workplan for this project.

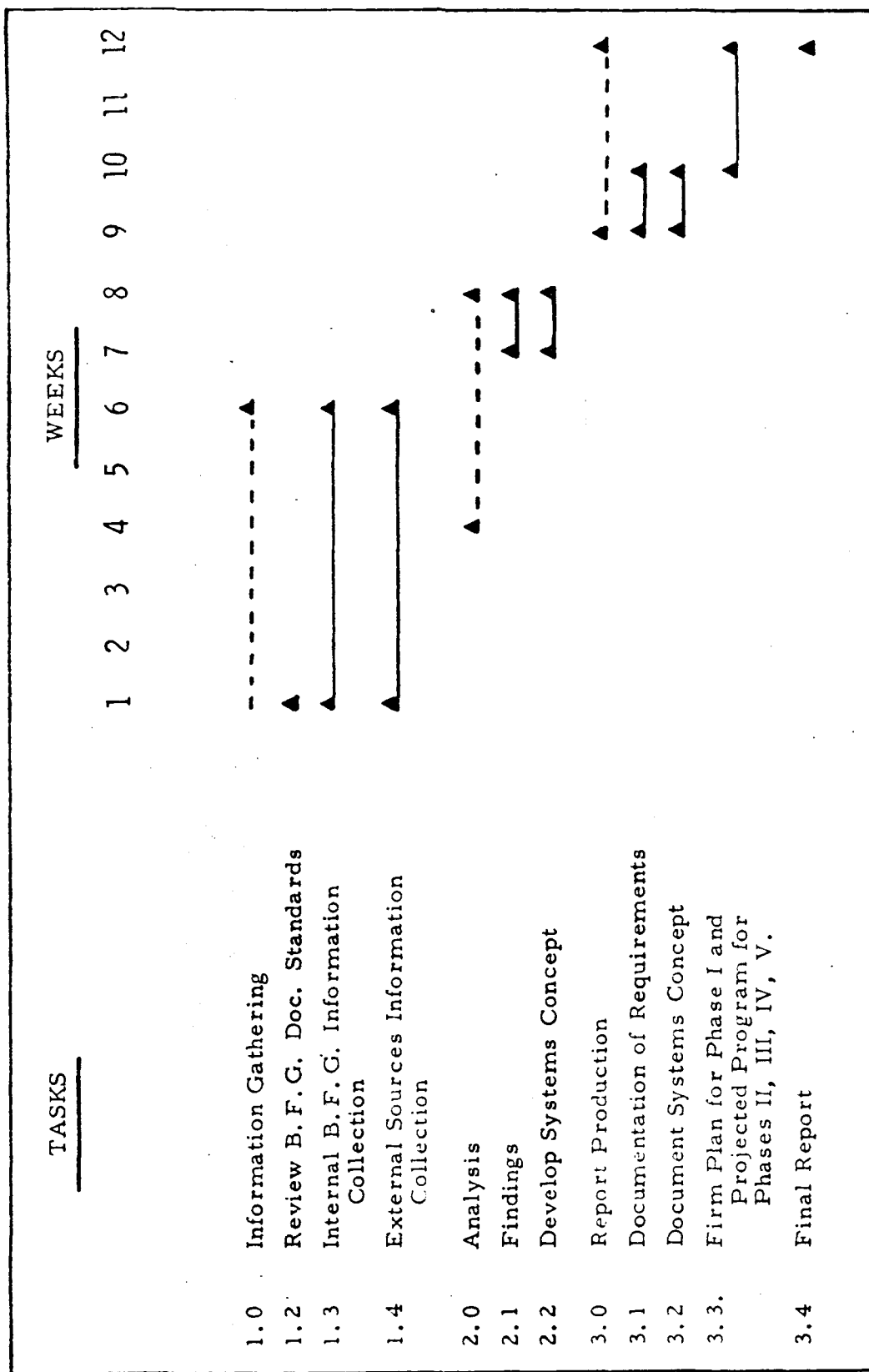


Figure 2. WORKPLAN

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SECTION III

MANAGEMENT PLAN AND DELIVERABLES

The purpose of this section is to describe the TCA/Informatics project management structure and suggested client interface. In addition, deliverables are specified.

The Medical Director for this project will be Tracy E. Barber, M. D., and the Project Director, Mr. Charles H. Robbins, will be responsible for all aspects of this project including scheduling, task performance, and delivery of the final product. The project structure is portrayed in Figure 3. The suggested client and TCA/Informatics relationship is shown in Figure 4.

The deliverables for this project will be:

- o Progress Reports - Each month the Project Director will furnish B. F. Goodrich with a summary progress report describing activities during the period and projected activities for the following month.

- o Final Report - The final report will be delineated at the conclusion of the project and will include the results of the requirements analysis, a systems concept and a firm plan for Phase I, and a projected program for Phases II, III, IV, and V.

It is important to this project that the TCA/Informatics project staff interact with a client focal point and a client advisory group to provide assistance in acquiring data in the areas of

- o Industrial Hygiene and/or Plant Operations,
- o Medical Records, and
- o Systems.

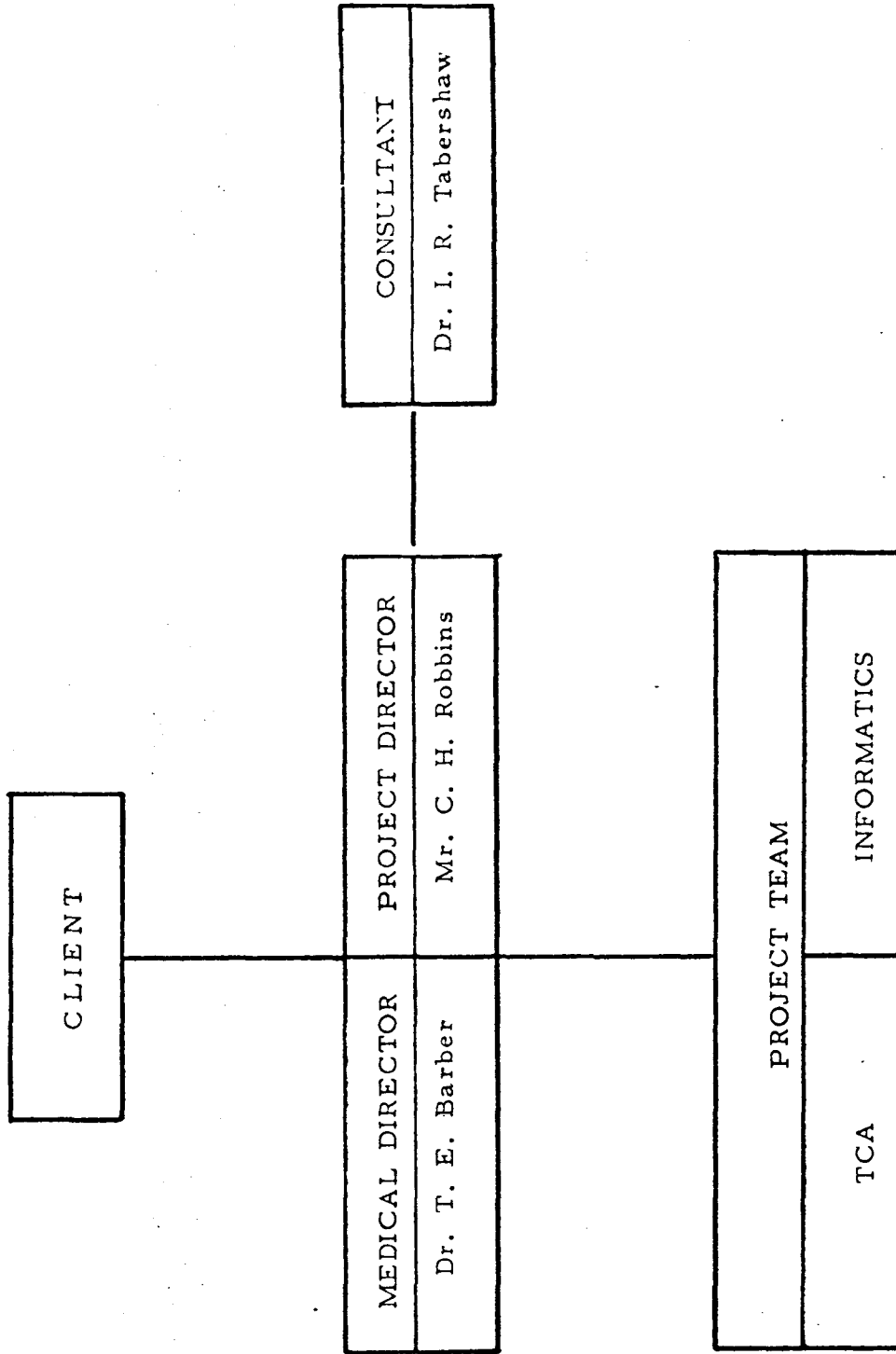


Figure 3. PROJECT MANAGEMENT STRUCTURE

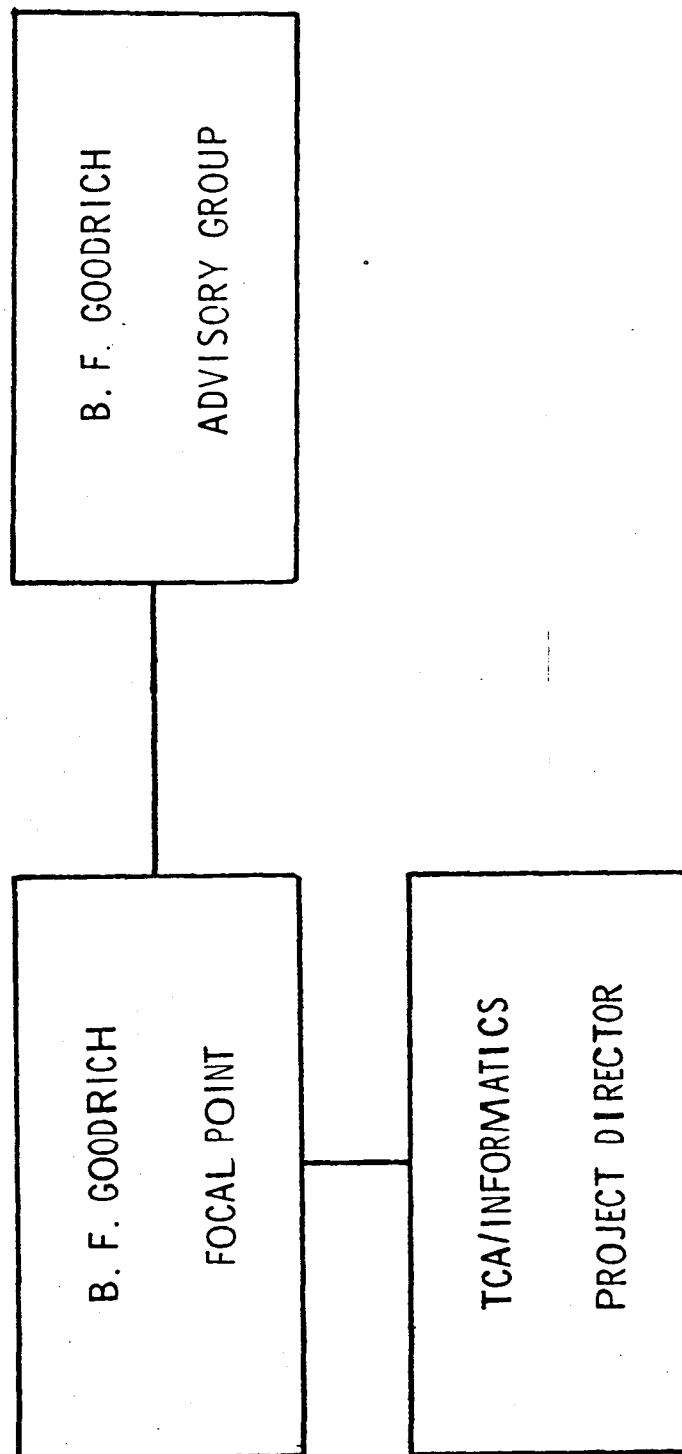


Figure 4. CLIENT INTERFACE

SECTION IV

RESUMES

Included in this section are resumes of those individuals experienced to perform on this effort:

Tracy E. Barber, M.D.

Charles H. Robbins

Eric B. Sansone, Ph.D.

Irving R. Tabershaw, M.D.

H. M. D. Utidjian, MB.BS., D.I.H.

A. Richard Walter

CURRICULUM VITAE

TRACY E. BARBER, M.D.

EDUCATION

University of North Dakota, B.A., 1940
University of North Dakota, B.S. (M), 1941
Temple University, M.D., 1943

EXPERIENCE

1943 - 1944, U.S. Naval Hospital, Bremerton, Washington
Internship

1944 - 1946, U.S. Navy Pacific Fleet, Medical Corps

1946 - 1948, Staff Physician in Internal Medicine,
Austin Clinic, Austin, Minnesota

George A. Hormel & Co., Austin, Minnesota

1948 - 1949, Associate Medical Director and Plant Physician.
Assisted in the direction and operation of the
company's on-site occupational health program at
the Austin facility.

1949 - 1952, Medical Director

1952 - 1973, Corporate Medical Director
Corporate responsibility for developing and adminis-
tering the company's occupational health program and
environmental control systems at 18 locations in the
United States and abroad. This involved management
direction of such related functions as: the Medical
Department, Safety, Environmental and Sanitation
Control, Workmen's Compensation Claims, and
Alcohol Control and Rehabilitation.
Advisor to management on changes in legislation
which affected occupational safety and health, work-
men's compensation, and pollution control.
Represented management in union negotiations on
subjects related to employee health and welfare.

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1973 - Present, Tabershaw-Cooper Associates, Inc.,
Berkeley, California. Consultants in Occupational Medicine.

SPECIALTY BOARD CERTIFICATION

American Board of Preventive Medicine
(Occupational Health), 1956

HOSPITAL STAFF APPOINTMENT

St. Olaf's Hospital, Austin, Minnesota
(Medical and Surgical)

TEACHING AFFILIATION

Visiting Lecturer in Occupational Medicine,
University of Minnesota

SOCIETIES

Fellow, Industrial Medical Association (Secretary and
Board member, 1965; Treasurer and Board
Member, 1968 - 1969)

Chairman, Occupational Health Hazards Committee,
National Safety Council, 1965

Chairman, Meat Packing Section, National Safety Council,
1965

Board of Directors, National Safety Council, 1970 to Present
Member, American Meat Institute, Personnel and Safety,
Mower County Medical Society (President, 1954)

Minnesota Academy of Occupational Medicine and Surgery
(President, 1953)

Chairman, Minnesota State Medical Association,
Industrial Health Section.

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SELECTED PUBLICATIONS

"Brucellosis in Humans" - diagnosis, treatment, prevention. Several papers published by JAMA, 1948 - 1954. Research done in cooperation with Mayo Clinic staff.

"Orthopedic Trauma in Meat Packing Industry" - Clinical Orthopedics

"Rehabilitation of Cardiacs in Industry" - American Heart Association

"Organization of Small Plant Medical Departments" - Minnesota Medicine

"Nurses in Industrial Medicine" - American Nurses Association - National Safety Council

"Safety Guideline for Meat Packing Industry" - National Safety Council

Several papers on "Sanitation in the Packing Industry" - "Control of Salmonella and Staphylococci Food Poisoning", reprinted in part of whole by National Provisioner and American Meat Institute.

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CURRICULUM VITAE

CHARLES H. ROBBINS

EDUCATION

University of Maryland, B.S.
University of Maryland, MBA
George Washington University/American University,
Graduate work in Computer Science and Systems Analysis,
Operations Research, Information Retrieval, Time
Sharing Systems, and Communications Systems
U.S. Army Medical Field Service School, Advanced Course

EXPERIENCE

United States Army

1951 - 1961, Army officer. Performed variety of duties.

1961 - 1963, Programmer/Analyst, Surgeon General's Office.
Developed a variety of management-oriented systems
in addition to a system for mass oral health assessment.

1963 - 1967, Chief, Computer Systems, in the R&D element
of the Army Medical Department.
One of the major responsibilities was the establishment
of a scientific and technical information program in
support of the Army Medical Department. In this
capacity, he acted as project manager for the develop-
ment of a system providing access to over 1 1/2 million
abstracts from approximately 5,000 life science journals.
In addition, he identified and developed methods for
utilizing primary sources of support such as MEDLARS,
SIE, DDC, etc. Internal systems were developed to
maintain current awareness on over 1,200 research
projects. A methodology was developed to determine
state-of-the art before any new research project was
initiated. He was Army Medical Project Manager for
CEIR, on-site survey. He participated, as Army
Medical Department Project Manager, on all major
STINFO programs. Also served as project manager for
the Walter Reed Chemstrucs System. During this period,
he started exploratory development work in computer
clinical applications. Areas included pattern recognition,
EKG analysis, multiphasic screening, automatic
abstracting of clinical data, and process control.

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United States Army (Continued)

1967 - 1968, ADP Consultant to the Surgeon, Vietnam.

Developed the first computer based medical supply system in a theater of operations. The objective of the system was to maintain proper levels of biologicals and other medical material in widely diverse areas for a 500,000 man force. Participated as a consultant to the Wound Ballistic Research Group, Walter Reed Army Institute of Research. Also developed a system for correlating clinical laboratory test results with map grid coordinates to determine disease incidence in relation to geographic location.

1968 - 1971, Surgeon General's representative to the NIH Computer Research Study Section.

1968 - 1971, Director, R&D Computer Systems Development, U.S. Army Surgeon General.

Responsible for automated medical research support, research program management; and research, development, test and evaluation of clinically oriented automated systems. He was project manager for the acquisition, installation, and operation of a modern advanced computer system in a major medical research environment, the Walter Reed Army Institute of Research. Determined the requirements for, designed, and installed a national time-shared computer system in direct support of ten medical research laboratories. Directed a project for the application of full text processing techniques to the automation of clinical files at the Burn Center, U.S. Army Institute of Surgical Research. Identified, proved the feasibility, and managed a project concerned with the development of excess Minuteman D17B inertial guidance systems as medical instrumentation process controllers. As Technical Advisor to the Medical Instrumentation Linkage project at William Beaumont General Hospital, he developed the concept and provided technical management for a project concerned with the automation of a clinical laboratory and the establishment of an intra-hospital communications system in a 750-bed hospital. In addition, he was responsible for providing scientific and technical information support to over 2,000 researchers. This was accomplished through his establishment of a biomedical technical information

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CURRICULUM VITAE

ERIC B. SANSONE, Ph. D.

EDUCATION

City College of New York, New York, B. Ch. E., 1960
University of Michigan, Ann Arbor, Michigan,
M. P. H. Radiological Health, 1962
University of Michigan, Ann Arbor, Michigan,
Ph. D. Industrial Health - Air Pollution, 1967

EXPERIENCE

1959 (June - September), Research Assistant,
Montefiore Hospital, New York.
Worked in the Metabolic Laboratories in which the
uptake and excretion of a variety of radioisotopes
from human patients was studied. Responsibilities
lay in calculating percent uptake and excretion by
various routes.

1960 (June - September), Junior Health Physicist,
Brookhaven National Laboratory.
Worked at the Medical Research Reactor performing
routine surveying and monitoring, as well as providing
coverage for personnel working within the reactor
enclosure.

1964 (January - June), Research Associate, University of
Michigan School of Public Health.
Responsible for laboratories in air pollution and some
industrial hygiene courses. Performed data handling
and evaluation of air quality measurements as part of
the Tecumseh study. Worked on research project on
adsorption and desorption of tetraethyl lead on silica gel.

1969 (July - September), Visiting Scientist, Lawrence
Radiation Laboratory.
Responsible for completion and testing of a spinning
disc aerosol generator and testing of a sodium flame
filter test rig.

1967 - Present, Consulting Engineer.
Professional services in the areas of industrial hygiene
and air resources management were provided to

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United States Army (Continued)

support operation which used a variety of means, both automated and manual, for satisfying individual requests upon demand and through use of a current awareness system.

1971 - 1973, Manager of Life Sciences, Computer Sciences Corporation (CSC).

Responsible for all aspects of CSC's Life Sciences Program, to include technical and program management. The program which he developed included a clinical support system for the 3,000-bed U.S. Naval Hospital at San Diego, California, including such areas as computer assisted ECG analysis, clinical laboratory, ICU and other direct patient care oriented applications. Other clinically oriented areas which he supervised included a medical information system for the NASA Marshall Space Flight Center which consisted of three elements: automated health trend analysis and data retrieval; multivariate analyses of employee health status through use of mathematical model; and employee scheduling and notification of examinations.

Other projects included the analysis and development of a computer based biomedical research support system for multiple research laboratories with diverse missions. A project concerned with improving the effectiveness of the DoD CHAMPUS program; automated analysis and retrieval of autopsy data using the SNOP index; a data processing effectiveness audit of a 43 hospital chain; and hospital accounting and billing systems.

Served as CSC's monitor for the Life Sciences portion of a NASA technology utilization project, including such areas as sterilization and decontamination.

Responsible for developing the technical approach for such projects as the multiphasic screening system to be used in the DoD AFEES Stations; an integrated AE/SE approach for the New Generation DoD Hospital Project; an experimental system for radiation protection guidance; information support requirements for HMO's; a pilot sickle cell disease screening and education program for the City of Philadelphia; and a method of evaluating the effectiveness and techniques used in alcoholism treatment centers.

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1973 - Present, Technical Director, Health Care and Medical Information Systems, Informatics, Inc.

Senior consultant in medical systems on a contract with the National Cancer Institute concerned with the establishment of an International Cancer Research Data Bank. In addition, directs the health care and medical information systems program which includes projects in health screening, hospital systems, health education, laboratory systems, medical audit and health care evaluation and planning.

UNIVERSITY AFFILIATIONS

Lecturer, University of Virginia
Lecturer, Northern Virginia Community College
Lecturer, Walter Reed Army Institute of Research

PROFESSIONAL ORGANIZATIONS

New York Academy of Sciences
Research Society of America
International Institute of Medical Electronics and
Biological Engineering
American Hospital Association
Association of Military Surgeons

Nominated and accepted for inclusion in the XI edition of
American Men of Science.

PUBLICATIONS

Authored several technical publications and lectured numerous times before such groups as the American Hospital Pharmacy Association, the American Association of Microbiologists, etc.

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government agencies, law firms, insurance firms, research and consulting groups, and industries which included paper, fibrous glass, foundries, shipbuilding, coating, communications, machining, power generation, and primary metal fabrication.

These services involved responsibility for planning, execution and evaluation of surveys designed to assess environmental stresses such as heat, noise, particulates, gases and vapors in the work and ambient environments. Survey results and conclusions and recommendations based on these were forwarded to the appropriate parties in the form of written reports.

1967 - Present, Associate Research Professor, Department of Occupational Health, University of Pittsburgh, Graduate School of Public Health.

Responsibilities included major portions of the teaching program in industrial hygiene engineering and air resources management. Had complete or partial responsibility for the organization and/or execution of Introduction to Occupational Health, Industrial Hygiene, Analytical Methods in Industrial Hygiene, Industrial Ventilation, Industrial Hygiene Practice, Air Resources Management Principles, Air Resources Measurements, Air Resources Management Practice, and Properties of Dusts, Smokes, and Mists.

Supervised the research of about fifteen graduate students in the past five years; five of the resulting theses have been published in the scientific literature and two more are in preparation (see below.) Currently sit on four Doctoral Committees. Served on the following School Committees: Executive, Educational Policies, Budget and Administration, Student-Faculty Relations, Continuing Education, Library.

SPECIALTY BOARDS

American Board of Industrial Hygiene, Comprehensive Practice;
Certificate No. 667
Board of Certified Safety Professionals; Certificate No. 3638.

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MEMBERSHIP IN PROFESSIONAL SOCIETIES

American Association for the Advancement of Science,
1968 - Present
American Conference of Governmental Industrial Hygienists,
1972 - Present
American Industrial Hygiene Association, 1965 - Present
Air Pollution Control Association, 1965 - Present
British Occupational Hygiene Society, 1968 - Present
Sigma Xi, 1973 - Present

COMMITTEE PARTICIPATION

American Industrial Hygiene Association
Member, Local Sections Committee, 1970 - 1971
Member, Aerosol Technology Committee, 1971 - Present

LISTINGS

American Men of Science

PUBLICATIONS

Sampling Airborne Solids in Ducts Following a 90° Bend.
Amer. Indust. Hyg. Assoc. J. 30: 487, 1969.

Assessment of Inhalation Hazards Aboard Inland River
Towboats, (with M. Corn). Amer. Indust. Hyg.
Assoc. J. 32: 313, 1971.

A Note on the Penetration of a Circular Tube by an Aerosol
with a Log Normal Size Distribution, (with D. Weyel).
Aerosol. Sci. 2: 413, 1971.

The Relationship Between Transmittance and Reflectance
Measurements of "Soiling Index," (with J. Y. Saucier).
Atm. Environ. 6: 37, 1972.

The Relationship Between "Soiling Index" and Suspended
Particulate Matter Concentrations, (with E. A. Pedace).
Air Poll. Contr. Assoc. J. 22: 348, 1972.

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Problem Severity Model and Implementation Plan for Occupational Health and Safety; A Case Study of Allegheny County, Pennsylvania, (with N.R. Brown and M. Corn). Amer. Indust. Hyg. Assoc. J. 33: 813, 1972.

A Technique for the Redispersion of Fine Powders. Powder Tech. 7: 355, 1973.

The Effect of Varying Inlet Geometry on the Collection Characteristics of the 10 mm Nylon Cyclone, (with W. Pickett). Amer. Indust. Hyg. Assoc. J. 34: 421, 1973.

The Effect of "Electroviscosity" on Liquid Sedimentation Analysis, (with R. Pavlik). Powder Tech. 8: 159, 1973.

Diffusion Losses of Sulfur Dioxide in Sampling Manifolds, (with A. Slowik). Air Poll. Contr. Assoc. J., in press.

Determination of Total Suspended Particulate Matter and Airborne Fiber Concentrations at Three Fibrous Glass Manufacturing Facilities, (with M. Corn). Environ. Res., in press.

Asbestos Cement Pipe: A Source of Chrysotile in Tap Water, submitted to Environ. Sci. Technol.

Penetration Characteristics of the 10 mm Nylon Cyclone with a Coal Aerosol, in preparation.

The Effects of Particle Size and Electrolyte Concentration on Liquid Sedimentation Analysis, in preparation.

Theses:

The Use of Radioisotopes in the Detection and Treatment of Cancer. (Undergraduate Thesis).

The Design and Operation of an Extrapolation Chamber. (Master's Thesis).

Sampling Airborne Solids in a Duct Following a 90° Bend. (Ph. D. Thesis).

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REPORTS OF SPONSORED RESEARCH

"Training Program in Occupational Health Concepts" USBM
Contract No. S 012 2051. Final Report covering the
period February 1, 1972 through March 31, 1973.

"Penetration Characteristics of the 10 mm Nylon Cyclone"
USBM Grant No. G 011 0124. Final Report covering
the period August 28, 1970 through October 31, 1973.

While at the University of Pittsburgh, was Principal Investigator
on the following Research Grants, Contracts, and Training
Grants:

"Collection Characteristics of 10 mm Nylon Cyclones,"
G 011 0124, United States Bureau of Mines;
August 28, 1970 through October 31, 1973.

"Training Program in Occupational Health Concepts,"
S 012 2051, United States Bureau of Mines;
February 1, 1972 through March 31, 1973.

"Environmental Health Traineeship Grant,"
EH 70-626, Public Health Service;
September 1, 1972 through August 31, 1973.

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CURRICULUM VITAE

IRVING R. TABERSHAW, M. D.

EDUCATION

University of Pennsylvania, B.S. Biology, 1928
State University of New York, Downstate Medical Center,
M. D., 1933

EXPERIENCE

1933 - 1938, Kings County Hospital, Brooklyn, New York.
Intern and resident training in medicine,
pathology and surgery.

1938 - 1941, Department of Labor, Commonwealth of
Massachusetts.
Industrial toxicology and occupational medicine,
including plant surveys, examination for specific
industrial hazards, particularly in defense
industries. Special interest in Beryllium disease.

1945 - 1946, Director, Division of Industrial Hygiene,
State of Alabama.
Surveys and studies in Alabama industry and
development of a State industrial hygiene program.

1946 - 1951, Medical Director, Eastern Division,
Liberty Mutual Insurance Company.
Diagnosis and control of occupational disease
hazards; development of preventive medical
programs in industry; teaching occupational
medicine and industrial hygiene at Columbia
University School of Public Health and
Administrative Medicine.

1951, Consultant to High Commissioner for Occupied
Germany, U.S. State Department.
Industrial Hygiene and related matters.

1951 - 1953, Medical Director, Purolator Products,
Rahway, New Jersey.
Directed medical department; carried out
preventive medical program; responsible for
industrial hygiene laboratory activities.

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1953 - 1957, Director, Division of Industrial Hygiene,
New York State Department of Labor.

Responsible for all medical, engineering and
laboratory activities of the State industrial
hygiene program. Responsible for development
of State radiation protection code. Areas of
particular interest: toxicology, Workmen's
Compensation problems, standards development,
and clinical occupational medicine.

1957 - 1958, Director of Health and Safety, Nuclear
Development Corporation.

Directed medical program of a research and
development group with particular interest in
radiation and other specific hazards; total
medicine and industrial hygiene control program.

1958 - 1962, Scientific Director, Joseph E. Seagram
& Sons, Inc.

Administrative responsibility for occupational
medical program of company. Directed research
on toxicology and pharmacology of alcohol;
responsible for development of drugs --
proprietary and prescription -- for a subsidiary
of the company.

1962 - 1972, Professor of Occupational Medicine,
School of Public Health, University of California.

Resumed full-time teaching in occupational
medicine and toxicology. Research in alcohol,
asbestos, pesticides. Head of Environmental
Health and Safety for the Campus; direct activities
of industrial hygienists, sanitarians, and
veterinarians, etc.

1967 - Present, Editor of the Journal of Occupational
Medicine.

Full responsibility for editing the Journal.

1967 - Present, President, Tabershaw-Cooper Associates,
Inc., Berkeley, California. Consultants in Occupational
Medicine.

Present, retired (Emeritus) from the University of
California at Berkeley as of July 1, 1972.

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SPECIALTY BOARD CERTIFICATION

Diplomate, American Board of Preventive Medicine
(Occupational Medicine), 1955

SOCIETIES

Fellow, American Academy of Occupational Medicine
(President, 1957 - 1958)
Fellow, Industrial Medical Association
(Board of Directors, 1965 - 1969)
Fellow, American Public Health Association
American Medical Association
American College Health Association
Permanent Commission and International Association
on Occupational Health
Alameda-Contra Costa County Medical Association

SPECIAL COMMITTEES AND ACTIVITIES

Consultant, California State Department of Public Health
Consultant, National Cancer Plan
Chairman, Task Force VI, Fifth National Conference on
Health in College Communities

SELECTED PUBLICATIONS

Hardy, H. and Tabershaw, I. R.: Delayed Chemical
Pneumonitis Occurring in Workers Exposed to
Beryllium Compounds. J. Indust. Hyg. Toxicol.
28: 197-211, September 1946.

Tabershaw, I. R. and Moorman, W.: Medicine and
Industrial Accident Prevention. Indust. Med.
20: 86-88, February 1951.

Tabershaw, I. R.: Report on Industrial Hygiene in
Western Zone of Germany. AMA Arch. Indust.
Health 3: 298-313, March 1951.

Tabershaw, I. R. and Kleinfeld, M.: Diagnostic Problems
of Pulmonary Industrial Disease. AMA Arch.
Indust. Health 13: 177-180, February 1956.

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Tabershaw, I.R.: Establishing Causal Relationship in Workmen's Compensation Cases. N.Y. J. Med. 57: 251-254, January 1957.

Tabershaw, I.R.: Chronic Effects of Ionizing Radiation: Industrial Experience. J. Chron. Dis. 9: 134-142, February 1959.

Tabershaw, I.R. and Cooper, W.C.: Sequelae of Acute Organic Phosphate Poisoning. J. Occup. Med. 8: 5-20, January 1966.

Tabershaw, I.R.: The Effect of Health and Safety Legislation on Occupational Medicine. J. Occup. Med. 9: 111-114, March 1967.

Tabershaw, I.R., Ottoboni, F. and Cooper, W.C.: Oxidants: Air Quality Criteria Based on Health Effects. J. Occup. Med. 10: 464-484, September 1968.

Tabershaw, I.R.: A New Health Professional -- The Environtologist. AMA Arch. Environ. Health 18: 811-815, May 1969.

Tabershaw, I.R., Ruotolo, B.P.W. and Gleason, R.P.: Plumbism Resulting from Oxyacetylene Cutting of Painted Structural Steel. J. Indust. Hyg. Toxicol. 25: 189-191, May 1943.

Tabershaw, I.R.: Medical Progress: Industrial Hygiene in 1945. New Engl. J. Med. 233: 437-443, October 1945.

Tabershaw, I.R. and Tebbens, B.D.: The Use of Aluminum in Silicosis Control. J. Med. Assoc. Alabama 15: 89-93, September 1945; also Indust. Med. 14: 709-711, September 1945.

Tabershaw, I.R.: Fifty Years Progress in Industrial Medicine; Industrial Medicine as a Social Instrument. New Engl. J. Med. 244: 634-639, April 1951.

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Tabershaw, I. R.: The Significance of Current Research
in Alcohol Metabolism. AMA Arch. Environ. Health
1: 248-252, September 1960.

Tabershaw, I. R. and Giel, C. P.: The Role of Drugs in
Occupational Medicine. J. Occup. Med. 3: 563-
566, December 1961.

Kakihana, R., Brown, D. R., McClearn, G. E., and
Tabershaw, I. R.: Brain Sensitivity to Alcohol
in Inbred Mouse Strains. Science 154: 1574-1575,
December 1966.

Dr. Tabershaw is the author of some 50 additional articles.

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CURRICULUM VITAE

HAIG MICHAEL DIKRAN UTIDJIAN, MB.BS., D.I.H.

EDUCATION

London University, Matriculation, 1946
First Examination for Medical and Veterinary Degrees, 1948
MB.BS University College Hospital, London University, 1954
Diploma in Industrial Health (England), Society of Apothecaries,
1962

EXPERIENCE

1955 - 1956, Highlands Hospital, Winchmore Hill, London,
(Northwest Metropolitan Hospital Area)

Internship, House Surgeon in Orthopedics, Casualty,
E.N.T. Surgery

1955 House Physician in Internal Medicine.

1956 - 1958, Royal Army Medical Corps.

Full Lieutenant for one year; Captain for one year.
General Duties Medical Officer. Attended Medical
Wards Tidworth Military Hospital, Southern Command,
England.

1958 - 1960, Pipeline Medical Officer in Iraq Petroleum and
Associated Companies in Iraq, M. East.

Highly responsible position in general and occupational
medicine and public health. Among other duties, solely
responsible for 24-bed infirmary.

1960 - 1961, General Practice in London under National Health
Service.

1961 - 1963, Industrial Medical Officer to Slough Industrial
Health Service, near London.

1963 - 1967, Industrial Medical Officer to Sugar Plantation
Industry (Caroni Limited) in Trinidad, W. Indies.

1967 - 1968, Research Fellow with Industrial Hygiene Foundation
of America, Inc., Pittsburgh.

Research in pathology of occupational pneumoconioses.

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1968 - 1972, Assistant Professor, Epidemiology and Microbiology, University of Pittsburgh.

In charge of teaching and research in area of chronic and non-infectious disease epidemiology. Epidemiologist and co-investigator in AID Contract for Research Services directed toward the development of a Combined Agent for Disease Prophylaxis and Contraception.

Consultant in Biostatistics and Epidemiology to Industrial Health Foundation of America Inc.

1972 - Present, Occupational Physician, Tabershaw-Cooper Associates, Inc., Berkeley, California. Consultants in Occupational Medicine.

LICENSURES

Licensed to practice Medicine and Surgery in the Commonwealth of Pennsylvania and in Great Britain.

SOCIETIES

Overseas Member, British Medical Association

Overseas Member, Society of Occupational Medicine
(Great Britain)

University of Pittsburgh Chapter of the Society of the Sigma Xi
Society of Epidemiologic Research, USA

American Conference of Governmental Industrial Hygienists

The Medical Society for the Study of Veneral Diseases

(Great Britain)

Industrial Medical Association (Western Branch), USA

SPECIAL COMMITTEES AND ACTIVITIES

Health Center Task Force of Western Pennsylvania Regional
Medical Program

American Cancer Society Institutional Research Grant Committee,
University of Pittsburgh

Committee on International Dimensions (Graduate School of
Public Health, University of Pittsburgh)

Member of Pittsburgh Student Health Service Advisory Committee.

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PUBLICATIONS

- Utidjian, M. D., Gross, P., and de Treville, R. T. P.: Ferruginous Bodies in Human Lungs - Prevalence at Random Autopsies. Arch. Environ. Health 17: 327-333, September 1968.
- Utidjian, H. M. D., and Cooper, W. C.: Sputum Cytology and Occupational Pulmonary Disease. J. Occup. Med. 15: 253-254, 1973.
- Editorial: Watch Sick Absence in 1968. Indust. Hyg. Dig. Vol. 32, No. 6, June 1968.
- IHF Statistical Studies of Fibrous Glass Workers. Proc. Third Fibrous Dust Seminar, Mellon Institute, November 1968.
- Pathological Studies of Ferruginous Bodies. Proc. Third Fibrous Dust Seminar, Mellon Institute, November 1968.
- Utidjian, H. M. D., and de Treville, R. T. P.: Fibrous Glass Manufacturing and Health, Report of an Epidemiological Study: Part I. Trans. Bull. No. 44, Industrial Health Foundation, Inc., pp 98-102, October 1970.
- Utidjian, H. M. D., Suris, A., and Ashmun, V. A.: The Epidemiology of Congenital Hydrocephalus, Anencephaly and Spina Bifida Aperta in Allegheny County, Pennsylvania, 1960 through 1968, in press.
- Garrett, P. A., and Utidjian, H. M. D.: The Epidemiology of Drug Use and Abuse in an Undergraduate College Population, in press.
- Singh, B., Cutler, J. C., and Utidjian, H. M. D.: Studies on the Development of a Vaginal Preparation Prophylaxis Against Venereal Disease, Other Genital Infections and Contraception. II. In Vitro Effect of Vaginal Contraceptive and Non-Contraceptive Preparations, on Treponema pallidum and N. gonorrhoeae. Brit. J. Ven. Dis. 48: 57-64, 1972.

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Cutler, J. C. C., Utidjian, H. M. D., Singh, B., Arnold, R. C.:
Studies on Development of a Vaginal Preparation
Providing Both Prophylaxis Against Venereal Disease,
Other Genital Infections, and Contraception. I.
Venereal Disease Prophylaxis, Past Experience,
Present Status and Plans for Future Studies. Mil. Med.
138: 88-91, 1973.

Singh, B., Cutler, J. C., and Utidjian, H. M. D.: Studies on
Development of a Vaginal Preparation Providing Both
Prophylaxis Against Venereal Disease, Other Genital
Infections and Contraception: III. In Vitro Effect of
Contraceptive Preparations on Candida albicans and
Trichomonas vaginalis. Contraception 5: 402-411, 1972.

Lee, T. Y., Utidjian, H. M. D., Singh, B., Carpenter, U., and
Cutler, J. C.: The Potential Impact of Chemical
Prophylaxis on the Incidence of Gonorrhea. Brit. J.
Ven. Dis. 48: 376-380, 1972.

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CURRICULUM VITAE

A. RICHARD WALTER

EDUCATION

Rutgers University, A. B. Psychology (honors), 1968.

EXPERIENCE

1959 - 1968, Clinical Laboratory Director, Clara Maass Hospital, Belleville, New Jersey.

(420-bed, acute and intermediate care, general community hospital.) Duties and responsibilities were: overall policy and technical direction of clinical laboratory, including systems and methods for both analytical procedures and information processing. Administrative responsibility for personnel and general operating policy. Reported to chief pathologist and assistant administrator.

1968 - 1969, Chief Medical Systems Analyst, Automedic Systems, East Orange, New Jersey.

Responsible for design and implementation of clinical laboratory information system on IBM 360-20 linked to central 360-60 remote computer in shared mode.

1968 - 1970, Vice President for Biological Systems, Physiodata, Inc., East Orange, New Jersey - subsidiary of S. F. Durst Inc., Cleveland, Ohio.

Duties and responsibilities were: development, marketing, and implementation of medical information systems, both for use internally by the company and for sale in the marketplace.

1970 - 1972, Vice President, INTEC, Inc., adjunct of Bio/Dynamics Inc., East Millstone, New Jersey.

Responsible for systems analysis, program designs, system implementation, direction and new device functional specifications, systems and marketing in the field of biological information systems.

1972 - 1974, Senior Health Planner, New Business Development Group, Health Systems Division, Westinghouse Corporation, Pittsburgh, Pennsylvania (Columbia, Maryland, site).

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SPECIALTY BOARD CERTIFICATION

Certified: New Jersey State Board of Medical Examiners,
Bio-Analytical Laboratory Director, 1964
(No. 164) by examination.

SOCIETIES

Member, Society of Computer Medicine, 1972 - Present
Member, PSI CHI, National Honor Society in Psychology,
1969 - Present

SELECTED PUBLICATIONS

Walter, A. R.: A New and More Precise Way of Counting
Platelets. Technical Bulletin. J. Amer. Soc. Clin.
Path. 26: 17-21, December 1963.

Walter, A. R., and Gerarde, H. P.: Clinical Evaluation of
the Unopette Used with the Coulter Counter. Esso
Toxicol. Bull. 98: 86-109, July 1964.

Walter, A. R., and Gerarde, H. P.: Further Evaluation of
the Unopette Used for WBC and RBC Counting.
Esso Toxicol. Bull. 99: 12-36, January 1965.

Walter, A. R.: A Statistical Analysis of the Incidence of
Elevated Random-Specimen Blood Sugars Among
General Hospital Inpatients. Lab. Procedures of
Amer. J. Publ. Health 1: 17-23, March 1965.

Walter, A. R.: What to Look for in a Computerized Laboratory
Information System. Part I. Lab. Med. 3: 31-38,
December 1972.

Walter, A. R.: What to Look for in a Computerized Laboratory
Information System. Part II. Lab Med. 4: 32-38,
January 1973.

Mr. Walter is the author of some dozen additional articles
and has been guest lecturer at many professional society meetings
on the general topic of health care.

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SECTION V

COST REQUIREMENTS

The cost to perform this effort on a time and materials basis is \$41,000.00. This includes professional labor, overhead, profit, and all other items except travel. Travel costs will be billed as incurred.