

APPENDIX II

MEDICAL RESEARCH PROGRAMS
OF THE
VETERANS ADMINISTRATION

GEORGE M. LYON, M. D.
ASSISTANT CHIEF MEDICAL DIRECTOR
for
RESEARCH AND EDUCATION

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The results of the research activities of the investigators are published in the professional, scientific, and technical journals so that information so derived can be made available not only to other VA personnel but to the interested professions as well. In this manner the public, at large, may benefit from the research achievements within the VA Research Program. A surprisingly large number of these publications indicate a joint authorship in which one of the authors is a full-time employee of the Veterans Administration and the other is a member of the faculty of the medical school or university associated with the VA hospital. This is but one of the many evidences of a community of interest that contributes so much to the Medical Program of the Veterans Administration.

There have, unfortunately, been times when some of our associates have been a bit neglectful of giving us proper credit for work they have done in close association with our research workers. While we are not pleased when this occurs we do have the satisfaction of knowing that we have contributed to their success through our cooperation and participation and that they have inadvertently paid us a compliment, even though not widely advertised, by thinking so highly of our contribution that they would like to "hog" the credit for it to themselves.

In general, we encounter much the same problems of human relations that characterize comparable situations within medical schools and university hospitals. Fortunately, we do have a minimum number of instances wherein a senior person may try to get his name on all publications within his service (in a medical service or department), regardless of the validity of his contribution thereto. The Research Committees serve an important and beneficial influence in moderating these abuses which, if not moderated, can have a most disturbing influence on the attitudes and the morale of the other research workers. I mention this only to point out that we are concerned with many of the same problems with which deans of medical schools and heads of departments in universities are concerned. Sometimes these problems can be most disconcerting to the responsible research administrator. Within the VA Medical Research Program we are rather fortunate because there has been displayed, as a general rule, an exemplary spirit of fairness and sportsmanship-like attitudes in such matters:

PART II

VA RADIOISOTOPE PROGRAM

HISTORICAL

During the Fall of 1946 and the Spring of 1947, General Paul Hawley, who was then Chief Medical Director, became deeply concerned about the problems that atomic energy might create for the Veterans Administration due to the fact that the Armed Services were so actively engaged in matters of atomic energy. After consultation with the representatives of the Manhattan Engineer District, General Hawley convened a conference within his office to consider this matter. The conference, held on August 7, 1947, was attended by Lieutenant General Lesl R. Groves, USA, Commanding General, Manhattan Engineer District; Colonel James Cooney, MC, USA, Chief Medical Officer, Manhattan Engineer District; Major General Raymond Bliss, USA, Surgeon General, U. S. Army; Rear Admiral W. L. Willcutts, MC, USN, Deputy Surgeon General, US Navy; Major General Malcom Grow, Air Surgeon, U.S.A.F.; Surgeon General Leonard Scheele, U. S. Public Health Service; General Hawley and myself. General Groves described, in general,

characteristics that these problems might include and then stressed the importance of having personnel trained, qualified and equipped with the facilities required to meet them.

General Hawley then requested Doctors Stafford Warren, Hymer L. Friedell, Shields Warren, Hugh Morgan, and Perrin Long to constitute a committee to advise him on matters of atomic medicine and to make recommendations as to what steps should next be taken to meet the problems discussed at the August 7th conference.

On September 5, 1947, this committee held its first meeting. The Veterans Administration was represented by General Hawley and myself. At this time the objectives of the Atomic Medicine Program were formulated and the broad aspects of a scheme for establishing a radioisotope program to support the more inclusive Atomic Medicine Program were drafted. The advisory committee was given the name, "Central Advisory Committee on Radioisotopes", as it was not desired at this time to publicize the fact that the Veterans Administration might have any problems in connection with atomic medicine especially the fact that there might be problems in connection with alleged service-connected disability claims. The committee recommended, (a) the establishment of an Atomic Medicine Division within the Department of Medicine and Surgery and the appointment of a Special Assistant for Atomic Medicine to head up the Division and to represent the Chief Medical Director in the handling of atomic medicine matters, and (b) the establishment of a Radioisotope Section to implement a Radioisotope Program. It further recommended that, for the time being, the existence of an Atomic Medicine Division be classified as "confidential" and that publicity be given instead to the existence of a Radioisotope Program administered through the Radioisotope Section. General Hawley took affirmative actions on these recommendations and it was in the manner described that the Radioisotope Program was initiated in the Fall of 1947.

The unique qualifications of the members of the Central Advisory Committee on Radioisotopes merit consideration: Doctor Stafford Warren, now Dean, Medical School, University of California, Los Angeles, was formerly Chief Medical Officer, Manhattan Engineer District (1943-1946). Doctor Hymer Friedell, now Professor of Radiology, Western Reserve Medical School, was Deputy Chief Medical Officer, Manhattan Engineer District (1943-1946). Doctor Shields Warren, now Professor of Pathology, Harvard Medical School, was Director, Division of Medicine and Biology, Atomic Energy Commission (1947-1952). Each of these individuals had participated in one or more atomic bomb tests in positions of senior responsibility. Doctors Morgan and Long have, for many years, been leaders not only in academic and civilian medicine but in military medicine as well.

The Radioisotope Program was initiated in the Fall of 1947. Most of that Fall was spent in planning. The first radioisotope laboratory was opened at VA Hospital, Van Nuys, Calif., in February, 1948, under the direction of Dr. M. E. Morton, one of the pioneers in research with radioisotopes at the University of California. This was but a few months after radioisotopes became generally available for medical purposes by the Atomic Energy Commission.

GENERAL STATEMENT OF OBJECTIVES AND PRINCIPLES

A major objective of the Radioisotope Program was, from the very beginning, to provide the Veterans Administration with qualified professional, scientific, and technical personnel, as well as the specialized facilities, required, (a) to meet the varied and unique problems of atomic energy that

might be of concern to the Veterans Administration, particularly in respect to the problems associated with the study and analysis of alleged service-connected disability claims, and (b) in connection with certain responsibilities that the Veterans Administration may have in civil defense. Much of the support for the Radioisotope Program has been predicated on, and justified by, the implications of this major objective. In this respect, it differs somewhat from other activities carried on within the VA Medical Research Program and supported from research funds (Program 8200).

The specific objective of the Radioisotope Program has been, and is, to employ radioisotopes within selected hospitals of the Veterans Administration, (a) in medical research, (b) in clinical diagnosis, and (c) in the medical treatment of veteran patients. Here again the Radioisotope Program differs somewhat from other activities supported from research funds in that it includes activities involving clinical diagnosis and treatment as well as research. As a matter of fact, in the larger and more active Radioisotope Units perhaps as much as one-half of their energies are expended in clinical diagnosis and treatment, particularly the former.

Radioisotope laboratories are established only in VA hospitals having affiliation with medical schools.

The Atomic Energy Commission has established certain criteria and standards of health protection, not only for the patients receiving radioisotopes, but as well for individuals who work with, or might be inadvertently exposed to, radioisotopes. These requirements are strictly observed within the VA Radioisotope Program.

The Veterans Administration, for reasons unique to its needs and responsibilities, has established certain requirements, both technical and administrative, which are rigorously observed within the Radioisotope Program.

Certain policies recommended by the Central Advisory Committee on Radioisotopes and established by the Chief Medical Director have been established and compliance therewith is a firm requirement within all VA hospitals where radioisotopes are employed. These include:

- a. medically sound policies and practices with respect to all human applications of radioisotopes
- b. sound policies and practices with respect to radiological safety, including appropriate technical and administrative requirements and a radiological safety plan formally drawn up and approved by the Radioisotope Committee and the Chief, Radioisotope Section
- c. sound, conservative policies and practices with respect to both publicity and public relations,
- d. supervision of the radioisotope program within an individual VA hospital by a Radioisotope Committee representing the Deans Committee affiliated with that hospital.

As a statement of principle, it is maintained that a conservative stand should be taken with respect to the position of radioisotopes in medicine within all VA hospitals in which radioisotopes are employed. This is particularly true in respect to treatment. The situation is very much more encouraging in clinical diagnosis where we have reason for greater optimism. It is generally believed, however, that the main contribution that radioisotopes can make to medical care will be as a tool in biological and medical research:

Within the VA Radioisotope Program, radioisotopes may be, and are, employed in basic research as well as in medical research and clinical investigations.

The Radioisotope Program complements but does not duplicate, or take the place of, the program conducted by the Atomic Energy Commission. This agency has no means whereby it could provide either the research or clinical services involving the use of radioisotopes that are required within the Veterans Administration, nor does any other agency of government.

The Radioisotope Program, as an integral part of the over-all Medical Research Program of the Veterans Administration, augments and extends the accomplishments of the research program within VA hospitals. It is closely integrated with the medical research programs within these hospitals. Insofar as practicable, radioisotope laboratories have been placed in close proximity to the medical research laboratories within an individual hospital.

Because of the unique requirements associated with the employment of radioisotopes within hospitals, particularly in a large hospital program such as that of the Veterans Administration, a much greater degree of central control is needed than is required in the other medical research or clinical investigation programs.

Radioisotopes may be used only in VA hospitals for which the Chief Medical Director, upon recommendation of the Central Advisory Committee on Radioisotopes, has specifically authorized the establishment of a Radioisotope Unit.

Within a VA hospital in which there has been established a radioisotope unit, there is freedom of use of radioisotopes provided, (a) applicable requirements of the Atomic Energy Commission and of the Veterans Administration are observed, and (b) such use has previously been approved by the Radioisotope Committee appointed to represent the Deans Committee in the supervision of the Radioisotope Program within that particular VA hospital.

In general, the same policies and principles pertaining to the Medical Research Program, as described earlier in this presentation, are applicable to research involving the use of radioisotopes.

During the first four years of the program, representatives of all VA radioisotope units met twice yearly in a working conference intended to provide exchange of information concerning, (a) administrative matters, (b) scientific and technical matters unique to the employment of radioisotopes, (c) the planning, organization, and conduct of research with radioisotopes, and (d) the results of research work and clinical investigations in which radioisotopes were used.

ORGANIZATION AND ADMINISTRATION WITHIN CENTRAL OFFICEGENERAL STATEMENT

The Special Assistant for Atomic Medicine serves as Chief, Atomic Medicine Division. He is responsible for the over-all administration of the VA Radioisotope Program and for its coordination within the professional services.

RADIOISOTOPE SECTION

The Radioisotope Program is administered through the Radioisotope Section, Atomic Medicine Division, Research and Education Service. The Chief, Radioisotope Section, is responsible for the coordination within Central Office of those matters with which the administrative divisions within a VA hospital are concerned.

The Radioisotope Section is assisted, both in an advisory capacity and in a service capacity, by the Central Advisory Committee on Radioisotopes. The members of this Committee serve as consultants to the Radioisotope Section. Three members also serve as special consultants to the hospital programs within certain regions. These are, (a) Eastern United States, Dr. Shields Warren, (b) Central United States, Dr. Hymer Fridell; and (c) Western United States, Dr. Stafford Warren. Obligations incurred in connection with these services, and those of other special consultants in atomic medicine, amount to \$10,000 annually.

The Radioisotope Section provides assistance and support to the Radioisotope Units, (a) in professional, scientific, and technical matters, (b) in administrative matters (personnel, finance, budget, supplies, and equipment, construction, etc.), (c) in program analysis, (d) in dissemination of information gained from semi-annual progress reports submitted by the Radioisotope Units, (e) in serving as a medium for exchange of information, and (f) in providing a wide variety of advisory services.

To assist the VA hospital in initiating and administering a radioisotope program, certain aids have been prepared by the Radioisotope Section and are provided to the Deans Committee and the Manager of the hospital concerned. These include, (a) "Suggestions for Planning and Initiating a Radioisotope Program within a VA Hospital", (b) "Suggestions as to Plan of Organization and Operational Procedures of a Radioisotope Unit within a VA Hospital", (c) "Suggestions as to Supply and Equipment Operations for a Radioisotope Unit", and (d) "List of Initial Supplies and Equipment for Radioisotope Units". These have proven to be most helpful to those concerned with the development and administration of the radioisotope programs within the VA hospitals having radioisotope units.

The Radioisotope Section has also planned, organized, and administered a program designed to train VA personnel to serve as monitors and monitor leaders in the radiological safety aspects of civil defense. To accomplish this, in the summer of 1949, the section also prepared for, and provided to, the VA hospitals a training guide under title, "Training Plan for Course in Radiological Defense (Monitors)". By the summer of 1950 within VA hospitals having Radioisotope Units more than 400 VA employees, other than physicians, dentists, and nurses, had received the training.

The Radioisotope Section, in 1950, cooperated with the Federal Civil Defense Administration in the preparation of "Health Services and Special Weapons Defense" (AG-11-1).

The Radioisotope Section, in 1951, assisted in the preparation of two manuscripts which were reproduced and widely distributed by the Council on National Emergency Medical Services of the American Medical Association. They were: "Planning and Organizing for Radiological Defense in Civil Defense", and, "Training Plan for Courses in, (a) Medical Aspects of Radiological Defense, (b) Medical Aspects of Atomic Warfare, and (c) Radiological Defense (Monitors)". These were modifications of manuscripts already prepared for use within the Veterans Administration.

RADIOISOTOPE UNIT

The organizational element within the VA hospital concerned with the use of radioisotopes is the Radioisotope Unit. It is under the immediate supervision of a director who is a physician qualified in the use of radioisotopes as well as in the field of clinical medicine and medical research. The director is appointed with the approval of the Chief Medical Director.

The director is assisted in an advisory and a supervisory capacity by the Radioisotope Committee representing the Deans Committee of the hospital. The duties of this committee are:

- a. advise the Manager as to policy in regard to radiological safety, public information, and public relations
- b. make recommendations as to the qualifications, appointment and employment of professional, scientific, and technical personnel required in the unit, including the director and all consultants to the unit
- c. review and, if approved, recommend proposed research activities involving radioisotopes, and proposed clinical uses of radioisotopes, and
- d. review, and when appropriate, approve, (1) such papers as may be proposed for publication, and (2) such exhibits as may be proposed for presentation before scientific groups when either involves the use of radioisotopes.

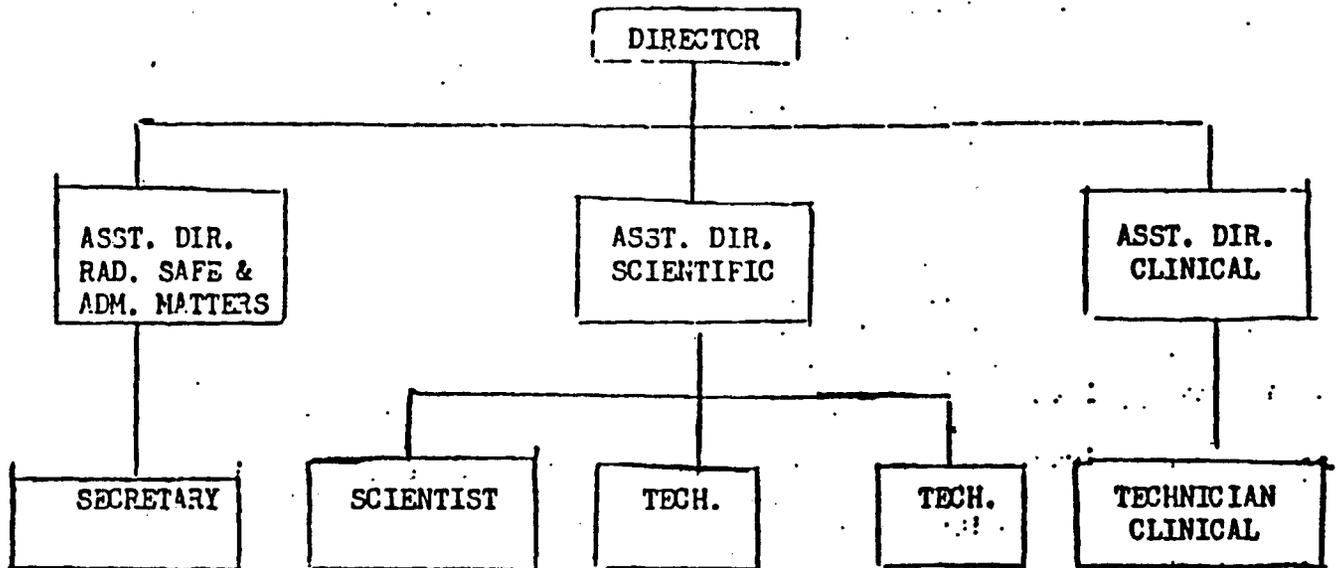
Membership on the Radioisotope Committee is not limited to members of the Deans Committee. Members may not be full-time employees of the Veterans Administration. Usually the members are qualified individuals within the teaching staff of the associated medical schools or universities.

Consultants may be professional, scientific, or technical personnel and need not necessarily be physicians.

Within the VA hospital and laboratories, the director is responsible, (a) for the administration of the Radioisotope Program, (b) for the human application of radioisotopes, and (c) for all radiological safety measures.

The Director is assisted by three principal assistants as indicated in the accompanying organization chart.

As a rule, the Radioisotope Unit is organized in this manner:



The Director and the Assistant Director (Clinical are physicians employed under Department of Medicine and Surgery. They are not paid from reasearch funds (Program 8200). The others are employed under regulations of the Civil Service Commission. They are paid from Research funds (Program 8200). Only citizens of the United States may be employed in any of these positions.

Of funds made available for the Radioisotope Units, 80 per cent is utilized for the payment of salaries of the scientists and technical personnel, other than physicians, dentists, and nurses, 5 per cent for consultants and 15 per cent for supplies and equipment.

SCOPE

The scope of the Radioisotope Program includes:

a. Employment of radioisotopes in medical research in a great variety of applications in the broad field of medical research. Special attention has been given to study of (a) thyroid function, (b) diseases, and disorders of the thyroid gland, (c) metabolism, (d) cardiac function, (e) peripheral vascular disease, (f) electrolyte balances, (g) blood volume determinations, (h) hemodynamics of cardiovascular system, and (i) etc.

b. Clinical diagnostic procedures have been developed and are employed in a variety of conditions including (a) practical diagnosis of hyperthyroidism and hypothyroidism, (b) the location and diagnosis of metastatic carcinoma of the thyroid, (c) diagnosis and localization of brain tumors, (d) determining pumping efficiency of the heart, (e) peripheral vascular function, (f) blood volume determinations, and (g) skin grafts, etc.

c. Treatment of (a) toxic hyperthyroidism, (b) carcinoma of thyroid and metastases, (c) leukemia, (d) polycythemia vera, (e) carcinoma of the testicle, (f) carcinoma of the prostate, (g) certain tumors (by interstitial infiltration), and (h) basal cell carcinoma of the skin.

OUTSTANDING ACHIEVEMENT

Outstanding technical achievements have been (a) the application of scintillation counters in clinical diagnosis and treatment as well as in medical research, (b) the application of the Texas well counter to medical research uses and (c) the development of the automatic "scanner" for making "scintigram" tracings of the outline of the thyroid gland and of brain tumors.

PART III

VA PROSTHETICS AND SENSORY AIDS RESEARCH PROGRAM

INTRODUCTION

Faced with considerable numbers of individuals who had suffered amputations in active service during World War II, the War Department turned to the National Research Council for assistance in the rehabilitation problems of these individuals. There was established then in 1947 through the National Research Council, a Committee on Artificial Limbs, supported first by the Office of the Surgeon General and later the Veterans Administration, to outline a continuing program of research and development in this field.

The purpose of this program has been to develop improved prosthetic and orthopedic appliances and sensory aids, exclusive of dental prostheses, and includes the practical utilization of these devices by veteran patients. The aim of the program is to conduct research and development of new and improved prosthetic and orthopedic appliances and sensory aids and to afford an opportunity for the testing and fitting of these devices so that the problems of successful utilization may be understood and surmounted. There exists a large number of disabled beneficiaries (most recent estimate - 257,500) who, under federal statutes, will remain permanently entitled to prosthetic and sensory aids and unless the Veterans Administration conducts an active prosthetics research and development program in this field, the interest of veteran individuals who are handicapped and disabled will not be served to the best advantage.

AUTHORITY

Public Law 729, 80th Congress, gives specific authorization for the Prosthetic and Sensory Aids Research Program, and authorizes the appropriation of up to \$1,000,000 annually for this purpose.

ORGANIZATION AND ADMINISTRATION

The Prosthetic Research Program is coordinated with other Veterans Administration medical research and is administered as to financial and contractual matters by the Assistant Chief Medical Director for Research and Education. The program is developed, planned, and supervised, however, by the Director, Prosthetic and Sensory Aids Service, Central Office.

NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL

Division of Medical Sciences

MINUTES OF THE COMMITTEE ON VETERANS MEDICAL PROBLEMS

29th Meeting - 20 April 1954

ATTENDANCE:

Committee:

Dr. Wilburt C. Davison, Chairman
Drs. J. E. Finesinger, A. McGehee Harvey,
Esmond R. Long, Ferrin H. Long, Herbert H.
Marks, and H. Houston Merritt.

Absent: Drs. M. E. DeBakey, A. LaRoy
Johnson, Donald Mainland, and J. Roscoe
Miller.

Veterans Administration:

Drs. George M. Lyon, Martin Cummings,
Theodore S. Moise, Robert E. Stewart, and
Augustus Thorndyke.

U. S. Army:

Dr. Ardie Lubin, Psychology Department,
Army Medical Service Graduate School,
Walter Reed Hospital.

Selective Service System:

Lt. Col. Clark Young.

Bio-Sciences Information
Exchange:

Drs. Stella Deignan and Harley N. Gould.

National Research Council:

Drs. R. Keith Cannan, Philip S. Owen,
G. W. Beebe, Thomas Bradley, B. M. Cohen,
J. O. Cole, Seymour Jablon, Edgar M.
Neptune, Jr., and L. H. Warren.

The meeting was called to order at 10:00 a.m. by the chairman, Dr. Wilburt C. Davison.

I. Consideration of the Minutes of the Previous Meeting

The minutes of the previous meeting were approved without change.

II. Some Results of the Artificial Limb Program

Dr. Augustus Thorndyke, Acting Director, Prosthetics and Sensory Aids Service of the Veterans Administration, briefly described the VA prosthetics research program. (See Appendix I.) Dr. Thorndyke mentioned that the work is primarily contractual but that the devices are evaluated in 30 VA centers by orthopedic and prosthetic appliance teams. This talk was illustrated by a display case containing old and new upper-extremity prostheses. Two amputees demonstrated upper- and lower-extremity prostheses. The upper-extremity, above-elbow prosthetic was manipulated by a plastic hook attached to a grafted pectoralis major muscle tunnel. This muscle, according to the demonstrator, is capable of developing a maximum power of 100 pounds.

APPENDIX VII

TABULATED SUMMARY FROM ANNUAL PROGRESS REPORTS OF RADIOISOTOPE UNITS

On December 31, 1953, there were 33 Radioisotope Units either established or in process of activation. Of these 22 were actually using radioisotopes to varying degrees. The others were procuring equipment and personnel and several have received their first allocations of radioisotopes since January 1, 1954.

On duty in the Units at the end of 1953 were:

Full time physicians, under DM&S	29
Full time Civil Service employees	173
Residents assigned for part time	17
Consultants rendering services	65
Others (on grants, etc.)	11

The work of the Units may be summarized under three headings, with summarized totals which are approximate:

1. RESEARCH

Active research studies under way	211
Articles published in journals during year	85
Articles accepted for publication later	51
Lectures and other presentations to groups other than VA staff meetings	169

2. DIAGNOSIS EMPLOYING RADIOISOTOPES

Thyroid uptake studies, varying techniques & times	6279 studies, 4551 patient
Thyroid clearance studies	699
Thyroid scanning procedures	788
Protein-bound iodine determinations	1055
Thyroxine synthesis rate determinations	443
Blood volume determinations using human serum albumin, or P-32	457
using Cr-51, (red cell volume)	537
Radiocardiographs	4
Circulation time studies	109
Peripheral vascular studies	208
Studies using Fe-59 (red cell survival, etc.)	167
Brain tumor localization	180
Scanning for liver metastases, pyelograms, etc.	129
Miscellaneous diagnostic procedures	1812

3. THERAPY USING RADIOISOTOPES

Polycythemia vera	62 doses to 48 patients
Chronic leukemia (lymphatic or myelogenous)	111 42
Thyroid carcinoma	89 25
Hyperthyroidism	329 271
Thyroid ablation for cardiac disease	50 32
Prostate carcinoma	19 19
Pleural effusion by radiogold colloid	46 42
" " " chronic radiophosphate	18 13
" " " Yttrium-90 colloids	16 11
Radiogold interstitially	5 5
Chronic radiophosphate interstitially	74 74
Miscellaneous therapeutic procedures	25