

UNITED STATES ATOMIC ENERGY COMMISSION
APPLICATION FOR BYPRODUCT MATERIAL LICENSE

INSTRUCTIONS.—Complete Items 1 through 16 if this is an initial application or an application for renewal of a license. Information contained in previous applications filed with the Commission with respect to Items 8 through 15 may be incorporated by reference provided references are clear and specific. Use supplemental sheets where necessary. Item 16 must be completed on all applications. Mail two copies to: U.S. Atomic Energy Commission, Washington, D.C., 20545, Attention: Isotopes Branch, Division of Materials Licensing. Upon approval of this application, the applicant will receive an AEC Byproduct Material License. An AEC Byproduct Material License is issued in accordance with the general requirements contained in Title 10, Code of Federal Regulations, Part 30, and the licensee is subject to Title 10, Code of Federal Regulations, Part 20.

1. (a) NAME AND STREET ADDRESS OF APPLICANT. (Institution, firm, hospital, person, etc. Include ZIP Code.)
Department of the Army
Fitzsimons General Hospital and U.S. Army
Medical Research and Nutrition Laboratory
Denver, Colorado 80240

(b) STREET ADDRESS(ES) AT WHICH BYPRODUCT MATERIAL WILL BE USED. (If different from 1(a), include ZIP Code.)
Department of the Army
Fitzsimons General Hospital and U.S. Army
Medical Research and Nutrition Laboratory
Denver, Colorado 80240

2. DEPARTMENT TO USE BYPRODUCT MATERIAL
Department of Radiology
Radiation Therapy Service

3. PREVIOUS LICENSE NUMBER(S). (If this is an application for renewal of a license, please indicate and give number.)
Amendment to Existing License
No. 05-00046-13 (30 Apr 1974)

4. INDIVIDUAL USER(S). (Name and title of individual(s) who will use or directly supervise use of byproduct material. Give training and experience in Items 8 and 9.)
Users will be approved by the Radioisotope Committee, Fitzsimons General Hospital. Curriculum Vitae of each provided, (Appendix I).

5. RADIATION PROTECTION OFFICER. (Name of person designated as radiation protection officer if other than individual user. Attach resume of his training and experience as in Items 8 and 9.)
Radiation Protection Officer will be appointed by Special Orders as prescribed in Hospital Regulations HR 40-406 (Appendix II).

6. (a) BYPRODUCT MATERIAL. (Element, and mass number of each.)
Cesium-137

(b) CHEMICAL AND/OR PHYSICAL FORM AND MAXIMUM NUMBER OF MILLCURIES OF EACH CHEMICAL AND/OR PHYSICAL FORM THAT YOU WILL POSSESS AT ANY ONE TIME. (If sealed source(s), also state name of manufacturer, model number, number of sources of each type, and activity per source.)
Cesium-137 is contained in an insoluble sintered inorganic ion exchange resin, doubly encapsulated in iridium hardened platinum - Inner container sealed by brazing; outer container sealed by autogenous welding.
Manufacturer: Amersham/Searle
2636 S. Clearbrook Drive
Arlington Heights, Illinois 60005

Model Number	Sources	Mg-Ra Equiv	Cs-137 Activity
CDCH 2	6	10	33 mCi
CDCH 3	6	15	50 mCi
CDCH 4	2	20	64 mCi

Total activity: 626 millicuries of Cesium-137

See attached literature for description of sources (Appendix III)

7. DESCRIBE PURPOSE FOR WHICH BYPRODUCT MATERIAL WILL BE USED. (If byproduct material is for human use, Supplement A (Form AEC-313a) must be completed in lieu of this item. If byproduct material is in the form of a sealed source, include the make and model number of the storage container and/or device in which the source will be stored and/or used.)

Human use (See Supplement A, AEC Form 313A)

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TRAINING AND EXPERIENCE		OF EACH INDIVIDUAL NAMED IN ITEM 4 (Use supplemental sheets if necessary)			
8. TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB (Circle answer)	FORMAL COURSE (Circle answer)	
a. Principles and practices of radiation protection	Individual users will have appropriate training and experience prior to approval by the Radioisotope Committee, Fitzsimons General Hospital. (See appendix I for training and experience of the committee members).		Yes No	Yes No	
b. Radioactivity measurement standardization and monitoring techniques and instruments			Yes No	Yes No	
c. Mathematics and calculations basic to the use and measurement of radioactivity			Yes No	Yes No	
d. Biological effects of radiation			Yes No	Yes No	
9. EXPERIENCE WITH RADIATION. (Actual use of radioisotopes or equivalent experience)					
ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE	
Same as item 8.					
10. RADIATION DETECTION INSTRUMENTS. (Use supplemental sheets if necessary.)					
TYPE OF INSTRUMENTS (Include make and model number of each)	NUMBER AVAILABLE	RADIATION DETECTED	SENSITIVITY RANGE (mr/hr)	WINDOW THICKNESS (mg/cm ²)	USE (Monitoring, surveying, measuring)
See Appendix IV for Radiation Detection Instruments.					
11. METHOD, FREQUENCY, AND STANDARDS USED IN CALIBRATING INSTRUMENTS LISTED ABOVE.					
11. See Appendix IV.					
12. FILM BADGES, DOSIMETERS, AND BIOASSAY PROCEDURES USED. (For film badges, specify method of calibrating and processing, or name of supplier.)					
All personnel occupationally exposed to ionizing radiation wear film badges. Badges are processed at 4-week intervals by the US Army Film Badge Service, Lexington Blue Grass Army Depot, Lexington, Ky. Pocket dosimeters are calibrated at 3-month intervals by the Sacramento Army Depot, Sacramento, California.					
INFORMATION TO BE SUBMITTED ON ADDITIONAL SHEETS IN DUPLICATE					
13. FACILITIES AND EQUIPMENT. Describe laboratory facilities and remote handling equipment, storage containers, shielding, fume hoods, etc. Explanatory sketch of facility is attached. (Circle answer) (Yes) No See Appendix II					
14. RADIATION PROTECTION PROGRAM. Describe the radiation protection program including control measures. If application covers sealed sources, submit leak testing procedures where applicable, name, training, and experience of person to perform leak tests, and arrangements for performing initial radiation survey, servicing, maintenance and repair of the source. See Appendix II					
15. WASTE DISPOSAL. If a commercial waste disposal service is employed, specify name of company. Otherwise, submit detailed description of methods which will be used for disposing of radioactive wastes and estimates of the type and amount of activity involved. Sealed source disposal in accordance with AR 755-15 (See application dated 25 June 1968).					
CERTIFICATE (This item must be completed by applicant)					
16. THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATE ON BEHALF OF THE APPLICANT NAMED IN ITEM 1, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PART 30, AND THAT ALL INFORMATION CONTAINED HEREIN, INCLUDING ANY SUPPLEMENTS ATTACHED HERETO, IS TRUE AND CORRECT TO THE BEST OF OUR KNOWLEDGE AND BELIEF					
Fitzsimons General Hospital and USA Medical Research and Nutritional Lab.					
Applicant passed in item 1					
By: H. F. CONGILL, COL, MC					
Chief, Department of Radiology					
Title of certifying official					
Date: 12 March 1973					
WARNING.—18 U. S. C., Section 1001, Act of June 25, 1948, 62 Stat. 749, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.					

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Form AEC-313a (11-63) 10 CFR 30 PAGE 1	UNITED STATES ATOMIC ENERGY COMMISSION APPLICATION FOR BYPRODUCT MATERIAL LICENSE - MEDICAL SUPPLEMENT A—HUMAN USE	Form approved: Budget Bureau No. 38-R0080
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If byproduct material is for "human use" (internal administration of byproduct material, or the radiation therefrom to human beings), complete this supplement and attach to the application for byproduct material license.

1. (a) USING PHYSICIAN'S NAME	(b) NAME AND ADDRESS OF APPLICANT (If different from 1(a), include ZIP Code.) Department of the Army Fitzsimons General Hospital and U.S. Army Medical Research and Nutrition Laboratory, Denver, Colo 80240
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2. THE USING PHYSICIAN INDICATED ABOVE IS LICENSED TO DISPENSE DRUGS IN THE PRACTICE OF MEDICINE BY A STATE OR TERRITORY OF THE UNITED STATES, THE DISTRICT OF COLUMBIA, OR THE COMMONWEALTH OF PUERTO RICO. As specified and approved by the Fitzsimons General Hospital Radioisotope Committee	(YES)	NO
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CIRCLE ANSWER

3. A STATEMENT OF USING PHYSICIAN'S CLINICAL RADIOISOTOPE EXPERIENCE (PAGE 3 OF THIS SUPPLEMENT) IS SUBMITTED IN SUPPORT OF THIS APPLICATION. IF ANSWER IS NO, USE PAGE 2 OF THIS SUPPLEMENT TO EXPLAIN OR REFER TO OTHER APPLICATION OR RELATED DOCUMENTS ON WHICH THIS INFORMATION APPEARS. <div style="text-align: center;">See page 2</div>	YES	(NO)
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CIRCLE ANSWER

PROPOSED DIAGNOSIS OR TREATMENT

4. (a) DESCRIBE PURPOSE FOR WHICH BYPRODUCT MATERIAL WILL BE USED INCLUDING SPECIFIC CONDITIONS OR DISEASES TO BE DIAGNOSED OR TREATED (Use page 2 if necessary): Cervical cancer, vaginal cancer, endometrial cancer, uterine sarcoma, surface molds for skin cancer, urethral cancer, ovarian cancer, and fallopian cancer.	
(b) CHEMICAL FORM ADMINISTERED: Sealed Cesium-137 sources	
(c) DESCRIBE PROCEDURES WHICH WILL BE OBSERVED TO MINIMIZE HAZARD FROM HANDLING, STORAGE, AND DISPOSAL OF THE BYPRODUCT MATERIAL: See appendix 11 to AEC-313	

(d) DESCRIPTION AND SKETCHES OF SPECIAL DEVICES TO BE USED FOR ADMINISTERING BYPRODUCT MATERIAL TO HUMAN BEINGS ARE (1) ATTACHED (LITERATURE REFERENCES WILL SUFFICE) Fletcher-Suit Applicator and Bloedorn Vaginal Applicator. Fletcher, S.H. Textbook of Radiotherapy, Lea & Febiger, Phila 1966	YES	(NO)
(2) ON FILE WITH THE ISOTOPE BRANCH REFER TO APPLICATION NO _____	YES	(NO)

CIRCLE ANSWER

CIRCLE ANSWER

5. PROPOSED DOSAGE SCHEDULE

(a) In millicuries for internally administered byproduct material other than discrete fixed sources; and in roentgens or rads, as appropriate, for internal or external irradiation from discrete fixed sources (gold seeds, cobalt needles, etc.) state separately for each condition or disease (use page 2 if necessary):	
Cervical cancer	6,000-9,000 rads
Vaginal cancer	5,000-7,000 rads
Endometrial cancer	3,000-8,000 rads
Uterine sarcoma	6,000-6,000 rads
Skin cancer (surface molds)	5,000-6,000 rads
Urethral cancer	6,000-7,000 rads
Ovarian cancer	4,000-7,000 rads
Fallopian cancer	6,000-8,000 rads

(b) INVESTIGATIVE PROPOSAL FOR EXPERIMENTAL, NEW OR UNUSUAL HUMAN USES IS ATTACHED. (Attachment should include outline of conditions to be evaluated, including data from animal studies and/or abstract of literature reference if any, number and type of patients (i. e. age group, moribund, etc.))	YES	(NO)
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CIRCLE ANSWER

6. IF BYPRODUCT MATERIAL WILL NOT BE OBTAINED IN PRECALIBRATED FORM FOR ORAL ADMINISTRATION OR IN PRECALIBRATED AND STERILIZED FORM FOR PARENTERAL ADMINISTRATION, DESCRIBE IDENTIFICATION, PROCESSING, AND STANDARDIZATION PROCEDURES:

Byproduct material will be obtained in precalibrated form for intracavitary brachytherapy.

7. THE PROPOSED USE OF BYPRODUCT MATERIAL HAS BEEN, OR WILL BE, APPROVED BY THE MEDICAL ISOTOPE COMMITTEE.	YES	NO
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CIRCLE ANSWER

HOSPITAL FACILITIES FOR INDIVIDUAL PRACTICE USE ONLY

8. (a) THE APPLICANT HAS COMPLETED ARRANGEMENTS FOR A HOSPITAL TO ADMIT RADIOACTIVE PATIENTS WHENEVER ADVISABLE	YES	NO
(b) A COPY OF INSTRUCTIONS TO BE FURNISHED TO THE HOSPITAL AS TO RADIOLOGICAL SAFETY PRECAUTIONS TO BE TAKEN AND AVAILABLE RADIATION INSTRUMENTATION IS ATTACHED	YES	NO

CIRCLE ANSWER

CIRCLE ANSWER

APPLICATION FOR BYPRODUCT MATERIAL LICENSE—MEDICAL
SUPPLEMENT A—HUMAN USE

PAGE 2

This page may be used for providing additional information. Please cross reference to specific items.

- #3. A full review of physicians clinical experience in the use of Cesium 137 Brachytherapy Sources will be made by the FGH Radioisotope Committee prior to granting authority to use the isotope.

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APPENDIX I

RADIOISOTOPE COMMITTEE

The U. S. Army Medical Research and Nutrition Laboratory operates jointly with Fitzsimons General Hospital under the same General Atomic Energy Commission License. Use of radioisotopes, within the limitations of the AEC License, is controlled by a Radioisotope Committee consisting of Fitzsimons General Hospital personnel as well as U. S. Army Medical Research and Nutrition Laboratory personnel. The persons making up the Radioisotope Committee and the functions of the committee are outlined in AR 40-37 and implemented by HR 15-1, attached as inclosure 1 to this appendix. The committee will be responsible for proper handling, storage and disposal of radioactive materials. In addition, the committee will:

1. Recommend changes to the SOP concerning periodic monitoring and enforcement of safety measures in the handling of radioactive material.
2. Review and grant permission for, or disapproval of, the use of radioactive material.
3. Certify individual users for each type of procedure with each individual radioisotope and insure that a copy of such certification is placed in the appropriate users' 201 file. Current records of these approved users, documenting the qualifications and limitations of each, will be maintained.
4. Prescribe special conditions which may be necessary to include and give advice concerning proposed studies where it is needed.

RADIOISOTOPE COMMITTEE

5. Review records and receive reports from the Radiological Protection Officer and recommend corrective action when indicated.
6. Make recommendations for improvement of present laboratory facilities and for expansion of the laboratories in accordance with needs.
7. Hold meetings at the call of the Chairman and report in writing to the Commanding Officer, the results of its deliberation.

FITZSIMONS GENERAL HOSPITAL
Denver, Colorado 80240

*HOSPITAL REGULATION
NUMBER 15-1

28 September 1972

BOARDS, COMMISSIONS AND COMMITTEES

PROFESSIONAL BOARDS AND COMMITTEES

1. Purpose. To establish the professional boards and committees necessary for the efficient operation of this installation.

2. Composition. The senior officer is Chairman unless otherwise specified.

a. Profile Classification Board ("On Call").

Assistant Chief, Department of Medicine
Assistant Chief, Department of Surgery
Chief, Department of Clinics and Community Health Care Services
Chief, Personnel Management Section, Military Personnel Branch
Unit Commanding Officer of individual concerned

b. Rabies Control Board ("On Call" - 5th Army Memo 40-30).

Chief and Assistant Chief, Department of Clinics & Community Health Care Services
Chief, Department of Pediatrics and designated representatives
Assistant Chief, Department of Medicine
Assistant Chief, Department of Surgery
Post Veterinarian
Preventive Medicine Officer - RECORDER

c. Therapeutic Agents Board (2 times per year at least - AR 40-2).

Chief, Professional Services - CHAIRMAN
Chief, Department of Surgery
Chief, Department of Medicine
Chief, Department of Psychiatry
Chief, Department of Clinics and Community Health Care Services
Chief, Department of Obstetrics-Gynecology
Chief, Department of Nursing
Chief, Department of Pediatrics
Chief, Pharmacy Service - RECORDER & COORDINATOR
Chief, Anesthesia & Operative Service
Chief, Oral Surgery Service

*This Hospital Regulation supersedes HR 15-1, 19 February 1971 with Change 1, 26 February 1971, Change 2, 24 March 1971, Change 3, 20 July 1971, Change 4, 22 September 1971, Change 5, 16 November 1971 and Change 6, 1 February 1972.

- d. Tumor Board (2d & 4th Friday at 1530 hours-HR 40-201).
Chief, Department of Surgery
Chief, Department of Medicine
Chief, Department of Obstetrics-Gynecology
Chief, Department of Radiology
Chief, Department of Pathology
Chief, Department of Dentistry (dental cases only)
Chief, Department of Pediatrics
Attending physician concerned
- e. Clinical Research Committee ("On Call" - HR 15-2).
Chief, Professional Services
Chief, Department of Surgery or Research Coordinator
Chief, Department of Medicine or Research Coordinator
Chief, Department of Obstetrics-Gynecology or Research Coordinator
Chief, Department of Dentistry or Research Coordinator
Chief, Department of Clinics and Community Health Care Services or Research Coordinator
Chief, Department of Psychiatry or Research Coordinator
Chief, Department of Pathology or Research Coordinator
Chief, Department of Radiology or Research Coordinator
Commanding Officer, USAMR&NL or representative
Research Associate Consultants as required
Chief, Clinical Research Service - RECORDER
Chief, Pharmacy Service
- f. Dental Education Committee (1st Monday of month at 1230 hours).
Chief, Department of Dentistry
Chief, Oral Surgery Service
Chief, Periodontia Service
Chief, Operative Service
- g. Hospital Education Committee (3d Tuesday each month at 1300 hours).
Commanding General
Deputy Commander/Director of Medical Education - CHAIRMAN
Executive Officer/Coordinator, Health Care Residents Program
Chief, Department of Surgery
Chief, Department of Medicine
Chief, Department of Obstetrics-Gynecology
Chief, Department of Psychiatry
Chief, Department of Clinics and Community Health Care Services
Chief, Department of Pathology
Chief, Department of Pediatrics

g. Hospital Education Committee (Cont'd)

Chief, Department of Radiology
Chief, Department of Dentistry
Chief, Department of Nursing
Chief, Pharmacy Service
Chief, Cardiology Service
Chief, Dermatology Service
Chief, General Medicine Service
Chief, Pulmonary Disease Service
Chief, Otolaryngology Service
Chief, Allergy Service
Chief, Anesthesia & Operative Service
Chief, Ophthalmology Service
Chief, General Surgery Service
Chief, Orthopedic Service
Chief, Neurosurgery Service
Chief, Thoracic Surgery Service
Chief, Urology Service
Chief, Neurology Service
Chief, Physical Medicine Service
Chief, Clinical Research Service
Chief, Gastroenterology Service
Chief, Plastic Surgery Service
Chief, Endocrinology Service
Chief, Hematology Service
Assistant Chief, Department of Medicine
Assistant Chief, Department of Pediatrics
Commanding Officer, USAMR&NL
Educational Coordinator, Department of Nursing
Intern Co-Advisors
Civilian Education Consultant (on call)
Post Chaplain

h. Hugh Mahon Lectureship Award Committee (Annually - April or May, Admin
Files, Deputy Commander's Office).

Chief, Department of Medicine
Chief, Department of Surgery
Chief, Department of Obstetrics-Gynecology
Chief, Department of Dentistry
Chief, Department of Pathology
Chief, Department of Radiology
Chief, Clinical Research Service
Secretary to Chief, Professional Services - COORDINATOR

28 September 1972

i. Infections Committee (2d Monday - OTSG Med Bulletin #3).

Chief, Department of Surgery - CHAIRMAN
Chief, Department of Clinics and Community Health Care Services
Chief, Department of Medicine
Chief, Department of Obstetrics-Gynecology
Chief, Department of Pathology
Chief, Microbiology Sub-Section, Department of Pathology
Chief, Anesthesia and Operative Service
Chief, Department of Pediatrics
Chief, Department of Nursing
Nursing Methods Analyst
Preventive Medicine Officer - RECORDER

j. Medical Library Committee (Quarterly, 2d Tuesday, 1st month of new quarter
at 1400 hrs, Jan, Apr, Jul & Oct, AR 40-2).

Chief, Professional Services - CHAIRMAN
Executive Officer
Chief, Department of Surgery
Chief, Department of Medicine
Chief, Department of Obstetrics-Gynecology
Chief, Department of Dentistry
Chief, Department of Pathology
Chief, Department of Radiology
Chief, Department of Nursing
Chief, Department of Psychiatry
Chief, Clinical Research Service
Medical Librarian - SECRETARY AND COORDINATOR

k. Medical Records Committee (Last Tuesday each month at 1300 hours, Bulletin
41, JCHA Mar 66).

Chief, Professional Services
*Chief, Department of Surgery
*Chief, Department of Medicine
Chief, Department of Obstetrics-Gynecology
Chief, Department of Pediatrics
Chief, Department of Psychiatry
*Chief, Department of Pathology
Chief, Department of Clinics and Community Health Care Services
Chief, Department of Nursing
Chief, Department of Dentistry
Medical Records Librarian
Chief, Patient Administration Division - RECORDER

*These members will also comprise a Tissue and Blood Transfusion Practice Committee. The Chairman will be the Chief, Department of Pathology. This committee will present its report during the regularly scheduled meetings of the Medical Records Committee.

*(1) Tissue Committee.

Chief, Department of Pathology - CHAIRMAN
Chief, Department of Medicine
Chief, Department of Surgery

*(2) Blood Transfusion Committee.

Director of Blood Bank, Department of Pathology
Hematologist - Department of Medicine
Chief, Department of Surgery
Chief, Anesthesia & Operative Service

*These committees will present their report during the regularly scheduled meetings of M.R.C.

l. Hospital Utilization Board (Monthly - Bulletin 41, JCHA Mar 66).

Chief, Professional Services - CHAIRMAN
Chief, Department of Surgery
Chief, Department of Medicine
Chief, Department of Obstetrics-Gynecology
Chief, Department of Psychiatry
Chief, Department of Pathology
Chief, Department of Clinics and Community Health Care Services
Chief, Department of Nursing
Chief, Department of Dentistry
Medical Records Librarian
Chief, Patient Administration Division - RECORDER

m. Radioisotope Committee (1st Tuesday each quarter, unless falls on 1st day, then on 8th, AR 40-37, HR 40-604).

Chief, Department of Radiology - CHAIRMAN
Chief, Department of Medicine
Chief, Department of Surgery
Chief, Department of Pathology
Chief, Radioisotope Section
Chief, Clinical Research Service
Radiation Safety Officer
Commanding Officer, USAMR&NL
Chief, Radioisotope Branch, Administrative Division, USAMR&NL
Chief, Purchasing & Contracting Branch, Logistics Division (non-voting member)

HR 15-1
28 September 1972

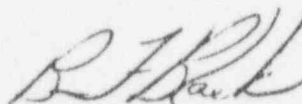
- n. Perinatal Mortality Committee.
Chief, Department of Obstetrics-Gynecology - CHAIRMAN
Chief, Department of Pediatrics
Assistant Chief, Department of Pathology
- o. Inhalation Therapy Committee.
Chief, Anesthesia & Operative Service - CHAIRMAN
Chief, Department of Medicine
Chief, Department of Surgery
- p. Cardio-Pulmonary Resuscitation Committee.
Chief, Department of Surgery - CHAIRMAN
Chief, Anesthesia & Operative Service
Chief, Cardiology Service
Chief, Department of Nursing
Chief, Pulmonary Disease Service
Chief, Thoracic Surgery Service

3. References.

- a. AR 40-2.
- b. AR 40-37.
- c. OTSG Med Bul #3.
- d. HR 15-2.
- e. HR 40-201.
- f. HR 40-604.
- g. HR 40-953.
- h. JCHA Bul 41, Mar 66.

MEDEO-DC

FOR THE COMMANDER:



B. F. BLACK
Major, MSC
Adjutant

DISTRIBUTION:

"B" & "C"

Plus 10 ea - Deputy Commander

MEMBERS OF THE RADIOISOTOPE COMMITTEE
FITZSIMONS GENERAL HOSPITAL

The following list of members is effective the date of the application to which it is attached. The curriculum vitae of each member is attached immediately following the list.

MEMBERS OF RADIOISOTOPE COMMITTEE

HERBERT F. COWGILL, Col, MC (Chairman
Chief, Department of Radiology

JAMES J. BERGIN, Col, MC
Chief, Department of Medicine

JOSEPH H. BAUGH, Col, MC
Chief, Department of Surgery

GUY C. GLENN, Col, MC
Chief, Department of Pathology

THOMAS A. VERDON, JR., LTC, MC
Chief, Nuclear Medicine Service

DONALD G. CORBY, LTC, MC
Chief, Clinical Research Service

CHARLES E. WHITE, LTC, MSC
Radiation Safety Officer

JOHN E. CANHAM, Col, MC
Commanding Officer, USAMR&NL

ROBERT L. MORRISSEY, Cpt, VC
Chief, Radioisotope Branch, USAMR&NL

WILLIAM B. KERR, Maj, MSC
Chief, Purchasing & Contracting Branch, Logistics Div.
(NON-VOTING MEMBER)

CURRICULUM VITAE

HERBERT F. CONGILL, M.D., Chief, Dept of Radiology, Fitzsimons General Hospital

1. Medical Education:

University of Cincinnati, Sept 1940 - Dec 1943, M.D. Degree
St. Louis City Hospital, St. Louis, Mo., Jan - Sept 1944, Internship
Christ Hospital Cincinnati, Cincinnati, Ohio, Jul 1946 - June 1947
St. Joseph Hospital, Marshfield, Wisc, Jul 1947 - June 1948

2. General Practice of Medicine:

Wadsworth, Ohio, Jul 1948 - Dec 1954

3. General Radiology Resident, Walter Reed Army Hospital, Jul 1955 - Dec 1958

Nuclear Medicine, U.S. Naval Hospital, Bethesda, Md., Aug 1957 - Jan 1958
American Board of Radiology with Nuclear Medicine Medallion, Dec 1958

4. Active Duty Military:

- a. 10 Oct 44 - 15 Jul 47, USNR, LT(jg), MC, Pacific Theater
- b. Chief, Dept of Radiology, 98th General Hospital, Germany, Jun 59 - Aug 62
- c. Chief, Dept of Radiology, US Army Hospital, Ft. Leonard Wood, Mo., Sep 62 - Aug 63
- d. Chief, Radiology, Chief, Professional Services, US Army Hospital, Ft. Sill, Okla, Jul 65 - June 67
- e. Chief, Diagnostic Service, Dept of Radiology, Letterman General Hospital, Jul 67 - Aug 68
- f. Chief, Radiology, Chief, Professional Services, 121st Evac Hospital, Korea, Sep 68 - Aug 69
- g. Chief, Dept of Radiology, Madigan General Hospital, Ft. Lewis, Wash., Sep 69 - Jul 71
- h. Chief, Dept of Radiology, Fitzsimons General Hospital, Denver, Colo., Aug 71 to present

5. Military Schooling:

- a. Company Grade Medical Officers Course, Ft. Sam Houston, Jan - June 55
- b. AMEDS Career Course, Ft. Sam Houston, Jan - June 59

6. U. S. Army Military Awards:

- a. Certificate of Achievement, Ft. Sill, Okla, 1965 - 1967
- b. Meritorious Service Award, Korea, Sep 68 - Aug 69
- c. Meritorious Service Award, Madigan General Hospital, Sep 69 - July 71
- d. Honorary A Prefix to MOS, Aug 69

CURRICULUM VITAE

NAME	James J. Bergin
PRESENT POSITION	Chief, Department of Medicine Director of Training, Department of Medicine Fitzsimons General Hospital Denver, Colorado 80240
HOME ADDRESS	[REDACTED]
PLACE OF BIRTH	[REDACTED]
DATE OF BIRTH	[REDACTED]
PARENTS	[REDACTED]
WIFE	[REDACTED]
CHILDREN	[REDACTED]
EDUCATION	
COLLEGE	Tufts University Medford, Massachusetts B.S. Degree, 1950 - magna cum laude Honor - President, Lambert-Lingsley Biology Society
MEDICAL SCHOOL	Tufts University Medical School Boston, Massachusetts M.D. Degree, 1954
POSTGRADUATE	Fellowship in Hematology, August 1963 - August 1964 Walter Reed Army Institute of Research Washington, D. C.

EDUCATION cont'd:

INTERNSHIP (ROTATING)	Valley Forge Army Hospital, July 1954 - June 1955 Phoenixville, Pennsylvania
RESIDENCY	Letterman General Hospital San Francisco, California Internal Medicine, 1955-1958 Chief Resident and Acting Assistant Chief, Department of Medicine, 1958-1959
SHORT POSTGRADUATE COURSES ATTENDED	American Society of Hematology, December 1966 New Orleans, Louisiana American College of Physicians Current Concepts in Blood Diseases, January 1967 Miami, Florida American College of Physicians Advances in Gastroenterology, March 1968 Philadelphia, Pennsylvania American College of Physicians Office Psychiatry for Internists, October 1969 Boston, Massachusetts Present Concepts in Internal Medicine, 1965, 1966, 1968, 1969 Letterman General Hospital San Francisco, California Pulmonary Disease Symposium, 1964, 1965, 1966, 1967, 1968, Fitzsimons General Hospital 1969, 1970, and 1971 Denver, Colorado The Hospital Medical Staff Conference, 1965, 1966, 1967, University of Colorado 1968, 1969, and 1970 Estes Park, Colorado Topics in Clinical Medicine, May 1971 The Johns Hopkins Hospital Baltimore, Maryland American College of Cardiology Long-Term Prognosis Following Valve and Heart Replacement, Aspen, Colorado January 1971 American Society of Hematology, December 1971 San Francisco, California American College of Cardiology Myocardial Infarction: A New Look at an Old Subject, Aspen, Colorado January 1972

ASSIGNMENTS
(MILITARY)

Internship, July 1954 - June 1955
Valley Forge General Hospital
Phoenixville, Pennsylvania

Residency, Internal Medicine, 1955-1959
Letterman General Hospital
San Francisco, California

Chief, Department of Medicine, 1959-1963
Deputy Commander, 1963
Commanding Officer, Feb and Mar 1963
Consultant in Internal Medicine to the Navy
and Air Force of the Antilles, 1959-1963
Military Representative to Schistosomiasis Board
of Puerto Rico, 1959-1963
Rodriguez Army Hospital
San Juan, Puerto Rico

Fellow in Hematology, 1963-1964
Walter Reed Army Institute of Research
Assistant Chief, Hematology Service, 1963-1964
Walter Reed General Hospital
Washington, D. C.

Chief, Department of Medicine, 1969 to Present
Assistant Chief, Department of Medicine, 1964-1969
Chief, General Medicine Service, 1964-1966
Chief, Hematology Section, 1964-1971
Research Coordinator, Department of Medicine, 1964-1969
Fitzsimons General Hospital
Denver, Colorado

AWARDS
(MILITARY)

Certificate of Achievement, 1963, Rodriguez Army Hospital
San Juan, Puerto Rico

Certificate of Achievement, 1964, from The Surgeon
General for Hematology Consultation on General
Douglas A. MacArthur

"A" Rating to the Military Occupational Specialty 3139
from The Surgeon General, 30 June 1970

CERTIFICATION BY
SPECIALTY BOARDS

American Board of Internal Medicine, 1963

MEMBERSHIP IN
PROFESSIONAL
SOCIETIES

American Medical Association
Associate, American College of Physicians, 1964
Fellow, American College of Physicians, 1966
Member, American Society of Hematology, 1966
Member, Colorado Society of Internal Medicine, 1969
Member, Colorado Heart Association, 1964

CIVILIAN TEACHING
POSITIONS

Assistant Clinical Professor of Medicine, 1964
Associate Clinical Professor of Medicine, 1970
University of Colorado School of Medicine
Denver, Colorado

MEDICAL LICENSURE

State of California, 1958
State of Colorado, 1968 (Separate Basic Science Examination)
Diplomate, National Board of Medical Examiners, 1955

RECOGNITIONS

Listed in Marquis Who's Who, Inc.
200 East Ohio Street
Chicago, Illinois

Listed in Dictionary of International Biography
Eighth Edition
Artillery Mansions
Victoria Street
London, S. W. 1, England

LIST OF
PUBLICATIONS

Attached

PARTICIPATION IN
NATIONAL AND
REGIONAL MEETINGS

Attached

PUBLICATIONS

1. Crone, R. I., and Bergin, J. J.: Gaucher's Disease in Identical Twins. *Ann. Intern. Med.*, 49:4, 1958.
2. Skipworth, G. B., and Bergin, J. J.: Coccidioidal Granulomas of Skin and Conjunctiva Treated with Intravenous Amphotericin B. *Arch. Dermat.*, 82:605, 1960.
3. Bergin, J. J.: Massive Bleeding with Fibrinolysis: Management with Heparin and Epsilon Amino Caproic Acid. *The Surgeon General (Technical Bulletin)*, 8-13:13, March 1966.
4. Bergin, J. J.: The Blood Transfusion Committee. *The Medical Staff in the Modern Hospital*. Ed., C. Wesley Eisele, M.D., Blakiston Division of McGraw Hill, Chapter 28, January 15, 1967.
5. Bergin, J. J.: The Complications of Therapy with Epsilon Aminocaproic Acid. *Medical Clinics of North America*, November 1966.
6. Bergin, J. J., Crosby, W. H., and Jahnke, E. J.: Massive Bleeding with Fibrinolysis: Management with Heparin and Epsilon Aminocaproic Acid. *Military Medicine*, 131:340, April 1966.
7. Bergin, J. J., Shambaugh, E. E., Haglund, R. B., and Overholt, E. L.: Embolization and Nonbacterial Thrombotic Endocarditis. *Postgraduate Medicine*, November 1966.
8. Bergin, J. J., Chapman, R., Ward, H., and Hamstra, R.: Pulmonary Manifestations of Hematologic Disease: Nineteenth Annual Symposium on Pulmonary Diseases, Fitzsimons General Hospital, September 1966.
9. Helmly, R. B., Bergin, J. J., and Shulman, N. R.: Quinine-Induced Purpura: Observation on Antibody Titers. *Arch. Intern. Med.*, 120:59, July 1967.
10. Bergin, J. J.: Malaria and the Lung. *Military Medicine*, 132:522, July 1967.
11. Bergin, J. J.: Malaria and the Lung. *United States Navy Medical News Letter*, 50:12, October 1967.
12. Everett, E. D., Volpe, J. A., and Bergin, J. J.: Pancreatitis in Infectious Mononucleosis. *Southern Medical Journal*, 62:359, March 1969.
13. Bergin, J. J., and Crosby, W. H.: The Acute Analog of Polycythemia Vera. *Military Medicine*, 133:601, August 1968.

PUBLICATIONS continued:

14. Knospe, W. H., Bergin, J. J., Conrad, M. E., and Jacobsen, C. B.: Cytogenetic Studies in Chronic Granulocytic Leukemia During Blast Crisis: An Unusual Cytogenic Finding in Two Ph₁ Chromosomes. *Amer. J. Med. Sci.*, 66:816, December 1967.
15. Weber, W. G., F-Nardo, G. L., and Bergin, J. J.: Scintiscanning in Malignant Lymphomatous Involvement of Bone. *Arch. Intern. Med.*, 121:433, May 1968.
16. Foley, G. P., Bergin, J. J., Pastore, R. A., Everett, E. D., and Cline, E. C.: Pregnancy Following Metastatic Trophoblastic Disease, A Case Report. *OB-GYN Abstract*, 1968.
17. Stutz, F. H., and Bergin, J. J.: Priapism in Leukemia, Experience at Fitzsimons General Hospital with Two Case Reports. *Military Medicine*, 135:44, January 1970.
18. Volpe, J. A., Bergin, J. J., and Overholt, E. L.: Chronic Budd-Chiari Syndrome as a Result of Visceral Thrombophlebitis Migrans Associated with Factor VII Deficiency. *Amer. J. Digest. Dis.*, 15:469, May 1970.
19. Wilson, F. E., and Bergin, J. J.: Recurrent Sunlight Induced Intravascular Hemolysis. *Southern Medical Journal*, 63:460, April 1970.
20. Everett, E. D., Newcomer, K., Anderson, J. W., Bergin, J. J., and Overholt, E. L.: Goodpasture's Syndrome: Response to Mercaptopurine and Prednisone. *JAMA*, 213:1849, September 14, 1970.
21. Bergin, J. J.: *Malaria. Current Diagnosis*, 3rd Ed., 1970.
22. Zuck, T. F., and Bergin, J. J.: Heparin-Exchange Phenomenon. *Lancet*, 2:210, July 25, 1970.
23. Bergin, J. J.: The Blood Transfusion Committee. Syllabus to Seventh Annual Hospital Medical Staff Conference, Estes Park, Colorado, October 1970.
24. Bergin, J. J.: Clinical Research in a Teaching Hospital. *Military Medicine*, 136:796, October 1971.
25. Zuck, T. F., Bergin, J. J., Raymond, J. M., and Dwyre, W. R.: Implications of Depressed Antithrombin-III Activity Associated with Oral Contraceptives. *Surgery, Gynec. & Obstet.*, 133:609, October 1971.
26. Zuck, T. F., Bergin, J. J., Raymond, J. M., Dwyre, W. R., and Corby, D. G.: Platelet Adhesiveness in Symptomatic Women Taking Oral Contraceptives, accepted for publication, *Thromb. et Diath. Hemorrh.*

PUBLICATIONS continued:

27. Bethlenfalvay, N. J., and Bergin, J. J.: Severe Cerebral Toxicity after Intravenous Nitrogen Mustard Therapy. *Cancer*, 29:366, February 1972.
28. DeVillez, R. L., Lufkin, E. G., and Bergin, J. J.: Symmetrical Enlargement of Breasts and Testes due to Leukemic Infiltration. *S. Med. J.*, 65:341, March 1972.
29. Goodman, R. L., Hazlett, D. R., Bergin, J. J., Flannery, E., and Schwartz, M.: Sickle Cell Trait and Loss of Pulmonary Function at 5,280 Feet and at Sea Level, accepted for publication by *Thromb. et Diath. Haemorrh.*
30. Hagler, L., Pastore, R. A., and Bergin, J. J.: Aplastic Anemia Following Viral Hepatitis: Report of Two Fatal Cases and Literature Review, accepted for publication by *Ann. Intern. Med.*
31. Bergin, J. J., Zuck, T. F., and Miller, R. E.: Compelling Splenectomy in Medically Compromised Patients, submitted to *Ann. Surg.*
32. Bergin, J. J.: Physical Health of the Chaplain. *The Apostolate to the Sick, A Guide for the Catholic Chaplain in Health Care Facilities*, 1972.
33. Lufkin, E. G., Ellis, G. J., Hartman, C. R., Hofeldt, F. D., Freck, M. D., and Bergin, J. J.: Improved Diagnosis of Hyperparathyroidism: Use of Serum Ionized Calcium and Tubular Reabsorption of Calcium, submitted to *Military Medicine*.
34. Zuck, T. F., and Bergin, J. J.: Shifts in Thrombin Kinetics Induced by Conjugated Equine Estrogens, accepted for publication by *Obstet. & Gynec.*
35. Zuck, T. F., and Bergin, J. J.: Thrombotic Predisposition Associated with Oral Contraceptives, accepted for publication by *Obstet. & Gynec.*

PARTICIPATION IN NATIONAL AND REGIONAL MEETINGS

Regional Meeting American College of Physicians, 1965, Massive Bleeding with Fibrinolysis: Management with Heparin and Epsilon Aminocaproic Acid.

Regional Meeting American College of Physicians, 1966, Embolization and Nonbacterial Thrombotic Endocarditis.

Regional Meeting American College of Physicians, 1967, The Complications of Therapy with Epsilon Aminocaproic Acid.

Regional Meeting American College of Physicians, 1967, Chronic Budd-Chiari Syndrome as a Result of Visceral Thrombophlebitis Migrans Associated with Factor VII Deficiency.

Regional Meeting American College of Physicians, 1968, Goodpasture's Syndrome.

Regional Meeting American College of Physicians, 1968, Platelet Antibodies and Splenectomy.

National American College of Physicians Meeting, 1967, Cytogenetic Studies in Chronic Granulocytic Leukemia During Blast Crisis: An Unusual Cytogenic Finding with Two Ph₁ Chromosomes.

The Hospital Medical Staff Conference, University of Colorado, 1965, The Blood Transfusion Committee.

The Hospital Medical Staff Conference, University of Colorado, 1966, The Blood Transfusion Committee.

The Hospital Medical Staff Conference, University of Colorado, 1967, The Blood Transfusion Committee.

Pulmonary Disease Symposium, Fitzsimons General Hospital, 1965, Pulmonary Manifestations of Hematologic Disease.

Pulmonary Disease Symposium, Fitzsimons General Hospital, 1966, Malaria and the Lung.

Pulmonary Disease Symposium, Fitzsimons General Hospital, 1967, Treatment of Auto-immune Disease.

Pulmonary Disease Symposium, Fitzsimons General Hospital, 1968, Chest Wall Tumors (Panel).

Pulmonary Disease Symposium, Fitzsimons General Hospital, 1969, Pulmonary Infections Related to the Use of Immunosuppressive Agents.

PARTICIPATION IN NATIONAL AND REGIONAL MEETINGS continued:

- Pulmonary Disease Symposium, Fitzsimons General Hospital, Etiology, Pathophysiology and Diagnosis of Pulmonary Embolism (Panel), 1969.
- Fifth Hospital Medical Staff Conference, University of Colorado, 1968, Transfusion Committee.
- Sixth Hospital Medical Staff Conference, University of Colorado, 1969, Transfusion Committee.
- Regional Meeting American College of Physicians, 1969, Splenectomy in Poor Risk Patient, and Treatment of Hodgkin's Disease.
- Clinical Convention of American Medical Association, December 1969, Medical Lessons from Vietnam.
- Pulmonary Disease Symposium, Fitzsimons General Hospital, The Pulmonary Manifestations of Lymphoproliferative Disease, 1970.
- Seventh Hospital Medical Staff Conference, University of Colorado, 1970, The Blood Transfusion Committee.
- National Meeting of American College of Physicians, Denver, Colorado, April 1971, Color Television, Moderator, Amputees on Skis.
- National Meeting of American College of Physicians, Denver, Colorado, April 1971, Member of Panel Selection, Program Committee.
- National Association of Military Surgeons, Washington, D. C., December 1970. Panel on Clinical Research in a Teaching Hospital.
- Regional Meeting of American College of Physicians, 1969, 1970, 1971, Member of Program Committee.
- Pulmonary Disease Symposium, Fitzsimons General Hospital, Infections in the Altered Host (Panel), and Unusual Pulmonary Diseases (Panel Chairman), 1971.
- Twentieth Annual Blood Symposium, Wayne State University, Detroit, Michigan, Loss of Pulmonary Function in Subjects with Sickle Cell Trait at Sea Level, 1971.
- American College of Chest Physicians, Philadelphia, Sickle Cell Trait and Loss of Pulmonary Function at 5,280 Feet and Sea Level, October 1971.
- American Society of Blood Banks, Chicago, Illinois, Continuous Platelet Infusion in Immune Thrombocytopenia, and Double Draw Technique for Platelet Harvesting, September 1971.

PARTICIPATION IN NATIONAL AND REGIONAL MEETINGS continued:

Regional Meeting of American College of Physicians, Colorado Springs, Colorado, 1972, Continuous Platelet Infusion in Immune Thrombocytopenia, and Hypercoagulability, the Pill and Testing.

Annual Meeting American Society of Hematology, San Francisco, California, 1971, The Effect of Conjugated Equine Estrogens on Thrombin Generation and Serum Thrombin Neutralization.

III Congress, International Society of Thrombosis and Haemostasis, Washington, D. C., 1972, Shifts in Thrombin Kinetics Induced by Conjugated Equine Estrogens, and Adequacy of Oral Iron to Support Erythropoiesis During Intensive Phlebotomy for Autologous Transfusions.

The Hospital Medical Staff Conference, University of Colorado, 1972, The Blood Transfusion Committee.

CURRICULUM VITAE

JOSEPH H. BAUGH, M. D.
Colonel, MC, USA
Chief, Department of Surgery
Fitzsimons General Hospital
Denver, Colorado 80240

Office Phone: 366-5311
Ext: 21116

Education

Grade - Date

<u>School</u>	<u>Degree</u>	
Wilmington High School Wilmington, Ohio	Diploma	1944
Wilmington College Wilmington, Ohio	BS	1949
St. Louis University School of Medicine	MD	1953

Post-Graduate Training

Internship, rotating Fitzsimons General Hospital, Denver, Colorado	1953 - 1954
General Surgery Resident VA Hospital, St. Louis, Missouri	1954 - 1955
General Surgery Residency Letterman General Hospital, San Francisco, Calif.	1956 - 1959
Thoracic Surgery Residency Letterman General Hospital, San Francisco, Calif.	1960 - 1962

Organizations:

Diplomate, American Board of Surgery	1960
Diplomate, American Board of Thoracic Surgery	1961
Fellow, American College of Surgeons	1966
Alpha Omega Alpha Honorary Medical Society	1953
Fellow, American College of Chest Physicians	1966
Fellow, The Southeastern Surgical Congress	1966

Military Service (Other than training)

United States Army

Continued on page 2

Military Service (other than training)

United States Army

European Theater	1944 - 1946
Brooke Army Medical Center	1955 - 1956
U.S. Army Medical Advisory Team	
Jordan Arab Army, Amman, Jordan	1962
Asst Chief, General Surgery Svc	
& Chief, Peripheral Vascular Surgery Section	
Walter Reed General Hospital, Washington, DC	1962 - 1965
Chief, General Surgery Service and Asst	
Chief, Dept of Surgery, Walter Reed GH	1965 - 1971
Chief, Department of Surgery, Fitzsimons	
General Hospital, Denver, Colorado	July 1971 to present

B I B L I O G R A P H Y

1. Extraperitoneal approach to the abdominal aorta. J. Nat Med Ass. 56:474-6, Nov 64.
2. Non-atherosclerotic arterial lesions and their management. I. Trauma. Curr Probl Surg 3 - 46, Feb 67 (79 ref.)
3. Non-atherosclerotic arterial lesions and their management. II. Inflammatory lesions of arteries. Curr Probl Surg 46-76, Feb 67 (85 ref.)
4. Non-atherosclerotic arterial lesions and their management. 3. Congenital lesions. IV. Miscellaneous arterial lesions. Curr Probl Surg 1 - 47, Mar 67.
5. Perforation and peritonitis in regional enteritis. Amer J Surg. 115-856-60, Jun 68.
6. Circulatory volume changes associated with chronic sepsis. Amer J Surg 115: 599 - 604, May 68
7. Diagnosis & treatment of blood cell mass deficit secondary to trauma with superimposed infection. J. Trauma 8: 140-4, Mar 68.
8. Tissue necrosis due to norepinephrine. Amer J. Surg. 115: 408 - 12, Mar 68.
9. Successful repair of a traumatic aneurysm of the abdominal aorta. Surgery 66: 492 - 6, Sep 69.
10. Significance of complications associated with vascular repairs performed in Vietnam. Arch Surg (Chicago) 100: 646-51, June 70.
11. Unilateral Raynaud's phenomenon caused by cervical - first rib anomalies. Amer J Med 48: 404 - 7, Mar 70.
12. Value of the ultrasonic flow detector in the management of peripheral vascular disease. Am J Surg 120: 522-6, Oct 70.
13. Management of Venous Injuries. Annals of Surg, Vol 171, No. 5, May 70.
14. Popliteal Artery Injuries in Vietnam, Amer Journal of Surgery, Vol 118, No. 4, pages 531-534, Oct 69.
15. A review of the late General Eisenhower's Operations: Epilog to a footnote to history. Annals of Surgery, Vol. 173, No. 5, May 1971.
16. Postoperative serum enzyme patterns, Journal Mil Medicine, Vol 136, pg 624, July 71.
17. Gastric perforation secondary to alkali ingestion, Amer J of Surg, June 70.

GUY C. GLENN, M. D.
Curriculum Vitae

Born [REDACTED] and graduated from Parma High School.

Received B. S. degree with Departmental Honors (Biology) from Denison University, Granville, Ohio 1953.

Attended the University of Cincinnati College of Medicine and graduated 1957. P K E Medical Honorary Society. Commissioned 2nd. Lt. Sept 1956.

Rotating Internship served at Walter Reed Army Hospital 1957-1958.

Medical Field Service School, Brooke Army Medical Center 1958.

Residency in Pathology begun February 1959 and finished in March 1963 at Fitzsimons General Hospital, Denver, Colorado.

Obtained certification in Anatomical and Clinical Pathology, April 1963.

Transferred to West Germany as the pathologist to the Fifth General Hospital, a 200 bed general hospital. 3000 surgicals, 6000 cytologies, 75,000-100,000 clinical procedures and approximately 60 autopsies yearly.

Returned to the U. S. in 1966 as Assistant Chief of Service and Chief of Anatomical Pathology at William Beaumont General Hospital, El Paso, Texas. Six residents in training, 6000 surgicals, 250 autopsies, 15,000 cytologies and approximately 250,000 clinical procedures per annum.

1968 Deputy Chief Pathology Service, Letterman General Hospital.

1969 Assistant Chief Pathology Service and Chief of Clinical Pathology. 6000 surgicals, 20,000 cytologies, 200 autopsies and 1,200,000 clinical procedures. Organized the Clinical Pathology Laboratory in the newly built Letterman. Prepared it for C.A.P. inspection and accreditation. It is reported to have passed on its first inspection. Compiled a lab manual for Letterman General Hospital.

1970 Transferred to London, United Kingdom, as U. S. Army Exchange Officer to the Royal Army Medical College.

Duties at Royal Army Medical College:

1. Review of all surgicals and autopsies performed in British Army.
2. Process wet tissue sent from Africa, South America and elsewhere.
3. Perform 20,000 cytologies per annum.
4. Teach several groups of medical officers by means of lectures, seminars, and personal demonstrations.

1972 Chief, Department of Pathology, Fitzsimons General Hospital.

PUBLICATIONS:

1. A Simple Method for Preparation of Dural Hemmcrafts
Laryngoscope, 1968.
2. Decalcification of Bone in Ten Hours with the Autotechnicon
American Journal of Clinical Pathology 1967
3. Pathologic Changes Associated with Intravenous Use of Sephadex
American Journal of Clinical Pathology 1969
4. Primary Immunologic Deficiency Diseases, Laboratory Medicine 1969
5. Pulmonary Cytology, Present Concepts of Internal Medicine 1969
(Letterman General Hospital in-house-journal)
6. Alcoholic Hepatitis, Present Concepts of Internal Medicine 1970
Military Medicine 1972. World Medical Tribune (In Press)
7. Biochemical Sequelae of Phosgen Inoculation, American Journal
of Clinical Pathology 1972.

CURRICULUM VITAE

Name: Thomas A. Verdon, Jr., M. D., Social Security No. [REDACTED]

Date and Place of Birth: [REDACTED]

Marital Status: [REDACTED]

Citizenship: U. S. A.

Present Position: Chief, Nuclear Medicine Service, Fitzsimons General Hospital, Denver, Colorado from July 1971 to present.
Lieutenant Colonel, U. S. Army Medical Corp

Licensure: Missouri 1958, California 1967

Education: 1949 to 1950 - Seton Hall University, South Orange, New Jersey,
Chemistry Major
1950 to 1954, - Fordham University College of Pharmacy
Bachelor of Science Degree in Pharmacy 1954
1954 to 1955 - St. Louis University School of Medicine,
St. Louis, Mo., M. D. Degree 1958

Internship:

1 July 1958 to 30 June 1959 - Walter Reed General Hospital,
Washington, D. C. Rotating Internship

Residences:

1 September 1959 to 30 August 1962 - Walter Reed General
Hospital, Washington, D. C. Three years residency in
Internal Medicine.

Special Training:

Post graduate fellowship in Nuclear Medicine at the Donner
Laboratory, Lawrence Radiation Laboratory, University of
California, Berkeley, California, July 1970 to July 1971

Professional Experience:

September 1962 to August 1965, Chief of Nuclear Medicine Service, U. S. Army Hospital, Landstuhl, Germany. Also served in capacity of Consultant in Nuclear Medicine to Surgeon, US Army, Europe.

September 1962 to August 1963, Assistant Chief of Gastroenterology Service, U. S. Army General Hospital, Landstuhl, Germany

September 1963 to August 1964, Assistant Chief of Cardiology Service, U. S. Army Hospital, Landstuhl, Germany

September 1964 to August 1965, Assistant Chief of Pulmonary Disease Service, U. S. Army Hospital, Landstuhl, Germany

September 1965 to August 1967, Chief of General Medicine Service, Letterman General Hospital, San Francisco, California

September 1965 to July 1969, Chief of Nuclear Medicine and Consultant to the Surgeon, 6th US Army for Nuclear Medicine, Letterman General Hospital, San Francisco, California

July 1970 to July 1971, Chief, Medical Consultant to the Surgeon U. S. Army, Vietnam

CURRICULUM VITAE

Name: Thomas A. Verdon, Jr., M. D., Social Security No. [REDACTED]

Date and Place of Birth: [REDACTED]

Marital Status: [REDACTED]

Citizenship: U. S. A.

Present Position: Chief, Nuclear Medicine Service, Fitzsimons General Hospital, Denver, Colorado from July 1971 to present.
Lieutenant Colonel, U. S. Army Medical Corp

Licensure: Missouri 1958, California 1967

Education: 1949 to 1950 - Seton Hall University, South Orange, New Jersey,
Chemistry Major
1950 to 1954, - Fordham University College of Pharmacy
Bachelor of Science Degree in Pharmacy 1954
1954 to 1958 - St. Louis University School of Medicine,
St. Louis, Mo., M. D. Degree 1958

Internship: 1 July 1958 to 30 June 1959 - Walter Reed General Hospital,
Washington, D. C. Rotating Internship

Residences: 1 September 1959 to 30 August 1962 - Walter Reed General
Hospital, Washington, D. C. Three years residency in
Internal Medicine.

Special Training: Post graduate fellowship in Nuclear Medicine at the Donner
Laboratory, Lawrence Radiation Laboratory, University of
California, Berkeley, California, July 1970 to July 1971

Educational Experience:

Director of Intern Training and Education, Letterman General Hospital, San Francisco, California, July 1966 to July 1969.

Director of Clinical Clerks, Education and Training, Letterman General Hospital, San Francisco, Calif., July 67 to July 69.

Director of Nuclear Medicine Fellow Training Program, Letterman General Hospital, San Francisco, Calif., September 1967 to July 1969.

Assistant Clinical Professor of Medicine, University of California, San Francisco, California, July 1967 to July 1969.

Assistant Clinical Professor of Radiology, (Nuclear Medicine), University of California, San Francisco, California, July 1967 to July 1969.

Lecturer in Medical Physics, Donner Laboratory, University of California, Berkeley, California, July 1970 to July 1971.

Consultant, Nuclear Medicine Institute, Cleveland, Ohio, January 1969 to present.

Visiting Physician, University of Colorado, Nuclear Medicine Service, University of Colorado, August 1971 to present.

Committee for Nuclear Medicine Technology, Colorado-Wyoming Regional Medical Program, Denver, Colorado, Community College.

Board Certification:

1. Diplomate of American Board of Internal Medicine, March 18, 1966.
2. Diplomate of American Board of Nuclear Medicine, March 25, 1972

Special Honors:

Elected directly to Fellowship of the American College of Physicians, 1966.

Selected for "Who's Who in America" (Western United States), April 1971.

Appointed member of the Advisory Committee of the History of Internal Medicine in the US Army Medical Department of Vietnam and South East Asia, March 1971.

Memberships in Professional Societies:

Fellow, American College of Physicians

American Medical Association

Past Membership Chairman, Northern California Chapter, Society of Nuclear Medicine 1968 - 1969

Vice President Rocky Mountain Chapter, Society of Nuclear Medicine 1972 - 1973

West German Medical Society

American Heart Association Council on Cardiology Radiology

PUBLICATIONS

1. Verdon, Thomas A., Jr.; Bruton, Joseph; Herman, Robert H. and Hirsch, William E.: Clinical and Chemical Response of Functioning Adrenal Cortical Carcinoma to Ortho, Para-DDD. *Metabolism*, Vol. 11, No. 2, 226, Feb. 1962.
2. Verdon, Thomas A., Jr.; Forrester, Ralph H. and Crosby, William H.: Hemolytic Anemia After Open Heart Repair of Ostium-Primum Defects. *New Eng. Journal of Med.*, 444, Aug 1963.
3. Verdon, Thomas A., Jr.: Radioisotope Clinic. *Med Bulletin US Army Europe*, Vol. 20, No.3, 68, March 1963.
4. Verdon, Thomas A., Jr.: Mannitol in Acute Renal Insufficiency. *Med Bulletin. US Army, Europe*, Vol. 20, No.6, 179, June 1963.
5. Verdon, Thomas A., Jr.; Beach, Prince D., and Huycke, Edward G.: Renal Scans Performed with Radioactive Mercury. *Med Bulletin US Army, Europe*. Vol. 20, No. 12. 371, December 1963.
6. Verdon, Thomas A., Jr.: Hepatoma. *Med. Bulletin, US Army, Europe*, Vol. 21, 220, July 1964.
7. Verdon, Thomas A., Jr.: Primary Hyperparathyroidism Presenting as Peptic Ulcer Disease. *Med. Bulletin, US Army, Europe*, Vol. 22, No. 8, 312, Aug. 1965.
8. Verdon, Thomas A., Jr.; Chandler, Bruce F. and Thurmond, Nicholas: Diagnostic Value of Lung Scans in a General Hospital Population. *Journal of Nuclear Medicine*, Vol. 8, No.5, 402, May 1967. (Abstract)
9. Verdon, Thomas A., Jr.; Barrett, O'Neill, Jr. and Panettiere, Frank: Significance of Spleen Pickup of Radioactive Gold-198. *Journal of Nuclear Medicine*, Vol. 8, No.5, 402, May 1967. (Abstract)
10. Verdon, Thomas A., Jr.; Hamilton, George D. and Cohen, Arthur.: The Usefulness of The Liver Scan in Detection and Treatment of Amoebic Abscess. *Journal of Nuclear Medicine*, Vol. 8, No. 5, 402, May 67. (Abstract)
11. Verdon, Thomas A., Jr.; Cohen, Arthur and Allen, Frank H.: Use of the Brain Scan in Determining Optimum Time for Carotid Artery Surgery. *Journal of Nuclear Medicine*, Vol. 9, No. 6, 357, June 1968. (Abstract)
12. Verdon, Thomas A., Jr.; Cohen, Arthur and Allen, Frank H.: Dynapix. A New Concept in Rapid Rectilinear Scanning. *Journal of Nuclear Medicine* Vol. 9, No.6, 374, June 1968. (Abstract)

13. Allen, Frank H.; Verdon, Thomas A., Jr. and Chandler, Bruce F.: Lung Scan. An Adjunct in the Study of Pulmonary Carcinoma. *Journal of Nuclear Medicine*, Vol. 9, No. 6, 365, June 1968. (Abstract)
14. Cohen, Arthur; Verdon, Thomas A., Jr.; Blaisdell, William F. and Fish, Mathews B.: Blood Brain Barrier as a Guide to Surgical Revascularization. *American Journal of Surgery*, Vol. 116, No.2, 158, Aug 1968.
15. Mante, Carl M.; Allen, Frank H. and Verdon, Thomas A., Jr.: Photo Scan Reversal. A Valuable Aide in Photo Scan Interpretation. *Journal of Nuclear Medicine*, Vol. 9, No. 12, page 610-612, December 1968.
16. LaBan, Myron M.; Johnson, Herbert E.; Verdon, Thomas A., Jr. and Grant, Arthur E.: Blood Volume Following Spinal Cord Injury in the Archives of Physical Medicine and Rehabilitation, Vol. 50, page 439-441, 1969.
17. Verdon, Thomas A., Jr. and Allen, Frank H.: Dynapix. A New Concept in Rapid Rectilinear Scanning. *Medical Radioisotope Scintigraphy*, Vol. 1, page 177-186, 1969. International Atomic Energy Agency, Vienna.
18. Bernard, David J.; McDonald, Robert A., and Verdon, Thomas A., Jr.: Brain Scanning for Subdural Hematoma and Problems in Interpretation. *Journal of Nuclear Medicine*, Vol. 10, page 322, 1969. (Abstract)
19. Christopherson, William J., Jr.; Bergeron, Dale A. and Verdon, Thomas A., Jr.: Liver Scans with 99m Technetium Sulfur Colloid. Report of 1,000 cases. *Journal of Nuclear Medicine*, Vol. 10, page 327, 1969. (Abst)
20. Christopherson, William J., Jr. and Verdon, Thomas A., Jr.: Lung Scans with 99m Technetium MAA: Report of 100 cases. *Journal of Nuclear Medicine*, Vol. 10, page 394, 1969. (Abstract)
21. Morel, Donald E.; Allen, Frank H. and Verdon, Thomas A., Jr.: Delayed 203 Mercury Chloromercurian and 99m Technetium Pertechnetate Brain Scans. *Journal of Nuclear Medicine*, Vol.10, page 423, 1969.
22. Verdon, Thomas A., Jr.; Morel, Donald E.; Morita, Eugene T. and Allen, Frank H.: Combined Liver-Lung Scans and the Diagnosis of Subphrenic Abscess. *Journal of Nuclear Medicine*, Vol. 10, page 448, 1969. (Abstract)
23. Verdon, Thomas A., Jr.; Morel, Donald E.; Morita, Eugene T. and Allen, Frank H.: Placenta Scanning. Rapid Imaging with a Ten Crystal Detector. *Journal of Nuclear Medicine*, Vol. 10, page 449, 1969. (Abstract)
24. Verdon, Thomas A., Jr.; Morita, Eugene T.; Morel, Donald E. and Allen, Frank H.: Hepatoma. Variable Scan Appearance. *Journal of Nuclear Medicine*, Vol. 10, page 449, 1969. (Abstract)

25. Wagner, Stanley C. and Verdon, Thomas A., Jr.: Use of Liver-Spleen Scan in the Clinical Staging of Patients with Hodgkin's Disease. *Journal of Nuclear Medicine*, Vol. 10, page 450. (Abstract)
26. Rameriz, Marcelino, Jr.; Green, Michael V. and Verdon, Thomas A., Jr.: Pre-Eluting and Fractional Eluting of ^{99m}Tc - ^{99m}Tc Technetium Generators. *Journal of Nuclear Medicine*, Vol. 10, page 461, 1969. (Abstract)
27. Verdon, Thomas A., Jr.; Morel, Donald E. and Morita, Eugene T.: The Liver Scan. A Useful Diagnostic Tool. *Present concepts in Internal Medicine*. Vol. 2, No.8, August 1969, page 385-393.
28. Verdon, Thomas A., Jr. and Thomas, Evan T.: Current Problems with *Neisseria Gonorrhoea* in Vietnam. *Medical Bulletin of US Army, Vietnam*, July - August 1970, page 9-11.
29. Verdon, Thomas A., Jr.: Forward on Symposium of Infectious Diseases of Military Significance. *Present Concepts in Internal Medicine*, Vol. 3, No.12, page 1, December 1970.
30. Verdon, Thomas A., Jr.: "Vietnam 1970." *Present Concepts in Internal Medicine*, Vol. 3, No. 12, page 1149-1153, 1970.
31. Verdon, Thomas A., Jr.: Editorial. *Medical Bulletin US Army Vietnam*, January - February 1970.
32. Verdon, Thomas A., Jr.: Editorial. *Medical Bulletin, US Army Vietnam*, March - April 1970.
33. Verdon, Thomas A., Jr.: Editorial. *US Army Medical Bulletin, Vietnam*, May - June 1970.
34. Verdon, Thomas A., Jr.; Yano, Yukio and Anger, Hal O.: The Use of Radionuclides in the Detection of Bone Metastases. *Journal of Surgical Oncology*, Vol. 3, No. 6, page 169, 1971.
35. Yano, Yukio; VanDyke, Donald; Verdon, Thomas A., Jr. and Anger, Hal O.: Cyclotron Produced ^{157}Dy compared with ^{187}F as Bone Scanning Agent Using the Whole Body Scanner and the Scintillation Camera. *Lawrence Radiation Laboratory Technical Report UCRL-20283*, February 1971.
36. Yano, Yukio; VanDyke, Donald; Verdon, Thomas A., Jr. and Anger, Hal O.: Cyclotron Produced ^{157}Dy compared with ^{187}F as Bone Scanning Agent Using the Whole Body Scanner and the Scintillation Camera. *Journal of Nuclear Medicine*, Vol. 12, No. 6, page 407, June 1971. (Abstract)
37. Yano, Yukio; VanDyke, Donald; Verdon, Thomas A., Jr. and Anger, Hal O.: Cyclotron Produced ^{157}Dy compared with ^{187}F as Bone Scanning Agent Using the Whole Body Scanner and the Scintillation Camera. *Journal of Nuclear Medicine*, Vol. 12, No. 12, 815-819, December 1971 (Publication)

38. Verdon, Thomas A., Jr.; Anger, Hal O.; Yano, Yukio and VanDyke, Donald: 99m Technetium Spherodized Albumin (human Microspheres for Long Imaging. Journal of Nuclear Medicine, Vol. 12, No.6, page 469, Jun 71.
39. MacDonald, Robert A.; Nesmith, Gerard A.; Bernard, David J. and Verdon, Thomas A., Jr.: Reduction of Residual Activity in Syringes by Flushing with Blood. Journal of Nuclear Medicine, Vol 12, page 480, June 1971.
40. Verdon, Thomas A., Jr.; Anger, Hal O.; Yano, Yukio,; VanDyke, Donald and MacRae, James: Whole Body Distribution of Commonly Used Radio-nuclides in Man. International Journal of Applied Radiation and Isotopes.
41. Verdon, Thomas A., Jr.; Anger, Hal O.; Yano, Yukio; VanDyke, Donald and MacRae, James: Whole Body Distribution of Commonly Used Radio-nuclides in Man. ZAED, 1971 No. 8.
42. Hartman, Charles K., Hofeldt, Fred D. and Verdon, Thomas A: The Invalidity of ^{131}I Urinary Excretion Studies in Patients with Thyroid Carcinoma.. Journal of Nuclear Medicine, Vol. 13, No. 6, page 434-435, June 1972.

Commercial Publications:

1. Verdon, Thomas A., Jr.: A New Concept in Rapid Rectilinear Scanning. Clinical Scintillator, Vol. 12, No 2 Jun 68.
2. Verdon, Thomas A., Jr.: Case Histories in Nuclear Medicine, Vol. 1, 67.
3. Verdon, Thomas A., Jr.: Case Histories in Nuclear Medicine, Vol 2, 68.
4. Verdon, Thomas A., Jr.: Case Histories in Nuclear Medicine, Vol. 3, 69.

Illustrations Supplied and Acknowledgments:

1. Auroscan-198 Information Booklet
2. Radioactive Nuclides in Medicine and Biology: Medicine by Solomon Silver, published by Lea and Febiger
3. Potential Early Diagnosis of Cancer and Radioactive Compounds by Rashid A. Fawciz. Chapter 1 in Progress in Atomic Medicine: Recent Advances in Nuclear Medicine, Vol. 3, John H. Lawrence, M. D., Editor, 1971 by Gruen & Stratton Inc.

In Preparation:

Verdon, Thomas A. Jr.; Anger, Hal O.; Van Dyke, Donald C. and Yano, Yukio: Whole Body Distribution of Commonly Used Radionuclides in Man. In preparation to be released as an Atomic Energy Commission Supplement

Verdon, Thomas A., Jr.; Anger, Hal O.; VanDyke, Donald C and Yano, Yukio: Whole Body Distribution of I-131 in Patients with Thyroid Carcinoma, In preparation.

Verdon, Thomas A., Jr.; Anger, Hal O., VanDyke, Donald C. and Yano, Yukio: Whole Body Distribution of 99m Technetium Pertechnetate. In preparation.

Exhibits:

Verdon, Thomas A., Jr.; Huycke, Edward G. and Beach, Prince D.: The Use of Radioisotopes in the Diagnosis of Kidney Disease was displayed at the Medical Surgical Training Conference, Garmisch, Germany May 1965.

Verdon, Thomas A., Jr.; Chandler, Bruce F.: The Lung Scan. A Rapid Assessment of Pulmonary Artery Blood Flow Patterns. The American College of Cardiology Meeting, Feb 28, 1968 and March 3, 1968, San Francisco, California.

Verdon, Thomas A.; Cohen, Arthur; Gooding, Charles; Allen, Frank H.: The Use of the Brain Scan in Determining Optimum Time for Carotid Artery Surgery. March 1968, San Francisco, American College of Cardiology.

Verdon, Thomas A., Jr.; Chandler, Bruce F. and Allen, Frank H.: The Lung Scan. A Rapid Assessment of Pulmonary Artery Blood Flow Patterns. Shown at the Pulmonary Disease Symposium, Pitasimons General Hospital, Denver, Colorado, September 1968.

Verdon, Thomas A., Jr. and Powell, Malcolm R.: Paired Gamma Images Obtained by two Major Systems. Displayed at the Society of Nuclear Medicine Meeting, June 1968, St Louis, Missouri, 27-30 June 1968.

Verdon, Thomas A., Jr. and Chandler, Bruce F.: Rapid Assessment of Pulmonary Artery Blood Flow Patterns. American Medical Association Scientific Session, June 16 - 20, 1968.

Verdon, Thomas A., Jr.; Anger, Hal O.; Yano, Yukio and VanDyke, Donald: Whole Body Distribution of Commonly Used Radionuclides in Man as shown by the Mark II Whole Body Scanner. Society of Nuclear Medicine Meeting, July 1972, Boston, Mass.

Verdon, Thomas A., Jr.; Anger, Hal O.; Yano, Yukio and VanDyke, Donald: Whole Body Distribution of Commonly Used Radionuclides in Man as shown by the Mark II Whole Body Scanner. Rocky Mountain Radiological Society Meeting, Denver, Colorado, August 1972.

SPEECHES

Presentations at Universities and Medical Schools:

1. University of California at San Francisco Medical School, 1966, 1967 and 1968.
2. Washington University, St Louis, Missouri, 1967 and 1968
3. St Louis University, St Louis, Missouri, 1967 and 1968
4. Stanford University, Palo Alto, California, May 1968
5. University of Zurich, Switzerland, 1968
6. University of Saigon, Vietnam, 1970
7. University of California, Berkeley, Donner Laboratory, 1970 and 1971
8. Ohio State University Medical School, 1971 - 1972
9. University of Colorado Medical School, 1971 - 1972
10. University of New Mexico, Albuquerque, New Mexico, February 1972

Presentations at National and International Meetings:

1. Bio-Medical Symposium, San Diego, California, March 1966
2. University of California, San Francisco, California, Nuclear Medicine Symposium, October 1967
3. First Annual Tri-Service, Nuclear Medicine Symposium, Letterman General Hospital, San Francisco, California, April 1967
4. Second Annual Tri-Service, Nuclear Medicine Symposium, Long Beach, California, April 1968
5. Washington University, St Louis, Missouri, Nuclear Medicine Symposium, January 1968
6. Society of Nuclear Medicine Meeting, St Louis, Missouri, June 1968
7. International Atomic Energy Agency Symposium on Scanning, Salzburg, Austria, August 1968
8. Nuclear Medicine Institute, Cleveland, Ohio, May 1969
9. Twelfth International Congress of Radiology, Tokyo, Japan, 1970, Oct.
10. Federation of Western Societies of Neurological Science, San Francisco California, February 1971
11. First Scientific Assembly, World Federation of Nuclear Medicine and Biology, Los Angeles, California, June 1971
12. Nuclear Medicine Institute, Cleveland, Ohio, November 1971
13. Thyroid Seminar, Broadmoor Hotel, Colorado Springs, Colo, June 1972.
14. Society of Nuclear Medicine Meeting, Boston, Mass., July 1972.
15. Society of Nuclear Medicine Technologist, National Meeting, Denver, Colorado, October 1972.

Regional Meetings:

1. Society of Nuclear Medicine Meeting, Northern California Chapter, San Francisco, California, March 1966
2. American College of Physicians Meeting, Monterey, California, February 1967
3. Society of Nuclear Medicine, Rocky Mountain Chapter, Denver Colorado, April 1968
4. Society of Nuclear Medicine, Rocky Mountain Chapter, Colorado Springs, Colorado, November 1971

Lectures to Technologists:

1. Northern California Society of Nuclear Medicine Technologist, San Francisco, California, May 1969
2. Northern California Society of Nuclear Medicine Technologist, San Joaquin General Hospital, Stockton, California, April 1971
3. Northern California Society of Nuclear Medicine Technologist, Oakland Coliseum, May 1971
4. Rocky Mountain Society of Nuclear Medicine Technologist, Denver, Colorado, September 1971
5. 6th Annual Symposium, Nuclear Medicine Technology, April 1972, Denver, Colorado.

Military Meetings:

1. Present Concepts in Internal Medicine, Letterman General Hospital San Francisco, Calif, 1965, 1966, 1967 and 1968
2. Pulmonary Disease Symposium, Fitzsimons General Hospital, Denver, Colorado, 1966, 1967 and 1968
3. The Kimbrough Urology Seminar, Walter Reed General Hospital, Washington, D C. 1967
4. Annual Medical Surgical Training Conference, Garmisch, Germany 1963, 1964 and 1965
5. The 3rd Annual Internal Medicine Meeting, Camranh Bay, Vietnam, April 1970
6. The First Corps Medical Meeting, DaNang, Republic of Vietnam, May 1970
7. First Annual Surgeons Meeting, Long Binh, Republic of Vietnam, December 1969

Professional Conferences Conducted in U. S. Army Hospitals:

1. U. S. Army Hospital, Heidelberg, Germany, 1963, 1964 and 1965
2. U. S. Army Hospital, Wiesbaden, Germany, 1963
3. U. S. Army Hospital, Mannheim, Germany, 1963 and 1964
4. U. S. Army Hospital, Lyon, France, 1963
5. U. S. Army Hospital, Frankfurt, Germany, 1962, 1963, 1964 and 1965
6. U. S. Army Hospital, Stuttgart, Germany, 1963 and 1964
7. U. S. Army Hospital, Wiesbaden, Germany, 1963
8. U. S. Army Hospital, Wiesbaden, Germany 1963 and 1964
9. U. S. Army Hospital, Wiesbaden, Germany, 1963 and 1965
10. U. S. Army Hospital, Wiesbaden, Germany, 1964 - 1965
11. U. S. Army Hospital, Rome, Italy, 1964
12. U. S. Army Hospital, Rome, Italy, 1964
13. U. S. Army Hospital, Rome, Italy, 1964
14. U. S. Army Hospital, San Diego, California, 1965, 1966, 1967 and 1968, 1969 and 1971
15. Walter Reed General Hospital, Washington, D. C. 1961 and 1962
16. Letterman General Hospital, San Francisco, California, 1965, 1966, 1967, 1968 and 1969
17. Brooke General Hospital, San Antonio, Texas, 1969
18. Fitzsimons General Hospital, Denver, Colorado 1971 and 1972
19. U. S. Army Hospital, Sasebo, Japan, 1961 and 1970
20. U. S. Army Hospital, Sasebo, 1969
21. U. S. Army Hospital, Camp Drake, 1969 and 1970
22. 5th Field Hospital, Bangkok, Thailand, 1970
23. 3rd Field Hospital, Saigon, Vietnam 1969 and 1970

23. 3rd Surgical Hospital, Cantho, Republic of Vietnam, 1969 and 1970
24. 12th Evac Hospital, Cuchi, Republic of Vietnam, 1969 and 1970
25. 24th Evac Hospital, Long Binh, Republic of Vietnam, 1969 and 1970
26. 93rd Evac Hospital, Long Binh, Republic of Vietnam, 1969 and 1970
27. 6th Convalescence Center, Camranh, Republic of Vietnam 1969 and 1970
28. 8th Field Hospital, Nhatrang, Republic of Vietnam 1969 and 1970
29. 71st Evac Hospital, Pleiku, Republic of Vietnam 1969 and 1970
30. 67th Evac Hospital, Qui Nhon, Republic of Vietnam, 1969 and 1970
31. 17th Field Hospital, An Khe, Republic of Vietnam 1969 and 1970
32. 311th General Hospital, Phu Thanh, Republic of Vietnam, 1969 and 1970
33. 91st Evac Hospital, Chulai, Republic of Vietnam, 1969 and 1970
34. 27th Surgical Hospital, Chulai, Republic of Vietnam, 1969 and 1970
35. 95th Evac Hospital, Da Nang, Republic of Vietnam, 1969 and 1970
36. 85th Evac Hospital, Faubai, Republic of Vietnam, 1969 and 1970
37. Patterson Army Hospital, Ft Monmouth, New Jersey, July 1972

Military Honors Awarded:

1. Legion of Merit
2. Army Commendation Medal
3. Vietnam Service Medal, 4 Campaign Stars
4. Vietnamese Campaign Medal with '66 Device, Republic of Vietnam
5. National Service Medal
6. Meritorious Service Plaque from the Armed Forces of the Republic of Korea
7. Certificate of Achievement Award, U. S. Army Europe

August 1972

CURRICULUM VITAE

NAME	Donald G. Corby, M.D., Lt Colonel, MC
PRESENT POSITION	Chief, Clinical Research Service Fitzsimons General Hospital Denver, Colorado 80240
HOME ADDRESS	[REDACTED]
PLACE OF BIRTH	[REDACTED]
DATE OF BIRTH	[REDACTED]
PARENTS	[REDACTED]
WIFE	[REDACTED]
CHILDREN	[REDACTED]
EDUCATION	
COLLEGE	Undergraduate College: 1951-1954 University of North Dakota Grand Forks, North Dakota
MEDICAL SCHOOL	University of North Dakota 1954-1957 Degree: B.S. in Medicine Northwestern University, 1957-1959 Chicago, Illinois Degree: M.D., 1959
POSTGRADUATE	
INTERNSHIP (ROTATING)	Evanston Hospital Association, 1959-1960 Evanston, Illinois

POSTGRADUATE CONT'D

RESIDENCY

Pediatrics, 1960-1961
Children's Memorial Hospital
Chicago, Illinois

Pediatrics
Brooke General Hospital, 1963-1965
Ft. Sam Houston, Texas

FELLOWSHIP

Pediatric Hematology
University of Illinois, 1968-1970
Chicago, Illinois

ASSIGNMENTS
(MILITARY)

Chief of Pediatrics
225th Station Hospital, USAREUR
1961-1963, Europe

Assistant Chief of Pediatrics
William Beaumont General Hospital, 1965-1968
El Paso, Texas

Director, Special Education and Clinical Research,
Pediatric Service
August-December 1970
Fitzsimons General Hospital
Denver, Colorado

Chief, Clinical Research Service
Fitzsimons General Hospital, January 1971 to present
Denver, Colorado

AWARDS
(MILITARY)

Certificate of Achievement, 1968
William Beaumont General Hospital
El Paso, Texas

Army Commendation Medal, 1968
William Beaumont General Hospital
El Paso, Texas

CERTIFICATION BY
SPECIALTY BOARDS

American Board of Pediatrics, 1965

MEMBERSHIP IN
PROFESSIONAL
SOCIETIES

American Medical Association, 1961
Fellow, American Academy of Pediatrics, 1967
American Association for the Advance of Science, 1968
Member, American Academy of Clinical Toxicology
(Member of the Literature Review Committee, 1968
Member of Board of Directors, 1971)
Member, Rocky Mountain Pediatric Society, 1970
Member, Colorado Chapter American Academy of
Pediatrics, 1970
Western Society of Pediatric Research, 1971

MEMBERSHIP IN
PROFESSIONAL
SOCIETIES CONT'D

American Federation of Clinical Research, 1971
American Society of Hematology, 1972
Theta Chi Fraternity
P. Beta Phi Medical Fraternity

CIVILIAN TEACHING
POSITIONS

Assistant Clinical Professor of Pediatrics,
University of Colorado School of Medicine, Sep 70
to present

MEMBERSHIP ON
PROFESSIONAL ADVISORY
COMMITTEES

CURRENT

Authority in Specialized Subtopics in Toxicology.
Toxicology Information Program, National Library
of Medicine, 1970

PAST

Medical Board of Directors, United Cerebral Palsy
Center,
El Paso, Texas, 1965-1968

Membership, Medical Board of Directors
El Paso Rehabilitation Center, 1965-1968
El Paso, Texas

Member, Special Education Placement Committee
El Paso Public Schools, 1966-1968
El Paso, Texas

MEDICAL LICENSURE

National Board of Medical Examiners, 1961
State of Illinois

LIST OF
PUBLICATIONS

Attached

PUBLICATIONS

1. Corby, D.G., Lisciandro, R.C., Lehman, R.H. & Decker, W.J.: Efficiency of methods used to evacuate the stomach after acute ingestions, *Pediatr*, 40:871, 1967.
2. Corby, D.G. & Decker, W.J.: Antidote for propoxyphene, *JAMA*, 204:549, 1968.
3. Decker, W.J., Corby, D.G. & Ibanex, J.D.: Aspirin adsorption with activated charcoal, ltr to Editor, *Lancet*, 6 Apr 1968, page 754-755.
4. Corby, D.G., Decker, W.J.: Treatment of propoxyphene poisoning, *JAMA*, 205:110-111, 1968.
5. Corby, D.G., Decker, W.J., Moran, M.J. & Payne, C.E.: Clinical comparison of pharmacologic emetics in children, *Pediatr*, 42:361, Aug 1968.
6. Decker, W.J., Combs, H.F. & Corby, D.G.: Adsorption of drugs and poisons by activated charcoal, *Toxicology & Applied Pharmacology*, 13:454-460, 1968.
7. Decker, W.J., Shpall, R.A., Corby, D.G., Combs, H.F. & Payne, C.E.: Inhibition of aspirin absorption by activated charcoal and apomorphine, *Clin Pharm & Ther*, 10:710, 1969.
8. Corby, D.G. & Decker, W.J.: Treatment of Salicylate poisoning, *Journal of Pediatrics*, 75:1083, 1969.
9. Corby, D.G., Oquendo-Cabrera, A. & Louro, J.M.: Thrombocytopenia in a patient with a relatively small facial hemangioma, *Clinical Pediatrics*, 8:12, Dec 1969.
10. Blein, C., Corby, D., Anderson, T., Schulman, I. & Gunnar, R.: Bacteremia and shock in man, Abstract (read by title only), *AFCR, Clinical Research*, 17:230, 1969.
11. Decker, W.J. & Corby, D.G.: Activated charcoal as a gastrointestinal decontaminant; Experiences with experimental animals and human subjects, *Clinical Toxicology*, 3:1-4, Mar 1970.
12. Corby, D.G., Fiser, R.H. & Decker, W.J.: Re-evaluation of the use of activated charcoal in the treatment of acute poisoning, *Ped Clin North Amer*, 17:3, Aug 1970.
13. Corby, D.G. & Schulman, I.: Thrombasthenia, *Amer J. Dis Child*, 121:140-144, Feb 1971.
14. Corby, D.G., Lowe, R.S., Haskins, R.C. & Hebertson, L.M.: Congenital trichomegaly, pigmentary degeneration of the retina and sustained growth retardation in utero, *AJDC*, 121:344-345, 1971.
15. Corby, D.G. & Schulman, I.: The effects of antenatal drug administration on aggregation of platelets of newborn infants, *J. Pediatr.*, 79:307-313, 1971.
16. Calvert, W.E., Corby, D.G., Hebertson, L.M. & Decker, W.J.: Acceptance of orally administered charcoal by children, *JAMA*, 215:641, 1971.

PUBLICATIONS - CONT'D

17. Corby, D.G. & Schulman, I.: Platelet defect in glycogen storage disease, Abstract (read by title only), Western Society of Pediatric Research, Clin Res, 19:207, 1971.
18. Corby, D.G. & Schulman, I.: Platelet function in experimental hyperbilirubinemia, Abstract, (read by title only), Western Society of Pediatric Research, Clin Res, 19:208, 1971.
19. Zuck, T.F., Bergin, J.J., Raymond, J.M., Dwyre, W.R. & Corby, D.G.: Platelet adhesiveness in symptomatic women taking oral contraceptives, Thromb. et Diasthes. Haemorr., Vol XXVI, No. 3: 426-430, 1971.
20. Baum, E.S., Koch, H.F., Corby, D.G. & Plunket, D.C.: Neurologic complications secondary to intrathecal methotrexate, Lancet, 1:649, 1971.
21. Zuck, T.F., Bergin, J.J. & Corby, D.G.: Effect of conjugated equine estrogens on thrombin generation and serum thrombin neutralization, Abstract, (read by title only), Program, American Society of Hematology, pg 266, 1971.
22. Corby, D.G., Shigeta, F.H. & Zuck, T.F.: Impaired ADP release from platelets of normal term newborns, Abstract, (read by title only), Pediatric Research, 6:108, 1972.

PAPERS PRESENTED AT NATIONAL MEETINGS

1. Clinical comparison of pharmacologic emetics in children. 10th Annual Meeting, American Association of Poison Control Centers, Washington, DC, 23 Oct 1967.
2. Rabies control in the military community. International Rabies Symposium, El Paso, Texas, 1967.
3. Management of learning disabilities in the military setting. 4th Uniformed Services Pediatric Seminar, Washington, DC, 5 Mar 1968.
4. Adsorption of drugs and poisons by activated charcoal. 7th Annual Meeting Society of Toxicology, Washington, DC, 4 Mar 1968.
5. Activated charcoal as a gastrointestinal decontaminant; experiences with experimental animals and human subjects. Symposium on Gastrointestinal Decontamination, 2nd Annual Meeting, American Academy of Clinical Toxicology, Chicago, 1969.
6. Effect of antenatal drug administration on aggregation of platelets in newborn infants. 40th Annual Meeting, Society of Pediatric Research, Atlantic City, N.J., May 1970.
7. Acceptance of orally administered charcoal by children. Western Society of Pediatric Research, Carmel, California, Jan 1971.
8. Speculations on the implications of newborn platelet defects. III Congress, International Society on Thrombosis and Haemostasis, Washington, DC, 1972.

CURRICULUM VITAE

CHARLES E. WHITE
LTC, MSC

Born:

Married:

Undergraduate Training

High School: Wagener Centralized High School
Wagener, South Carolina 1950

College: Clemson University
Clemson, South Carolina 1954
BS Chemistry

U.S. Naval P.G. School
Monterey, California 1962
BS Physics

Graduate Training

College: University of North Carolina
Chapel Hill, North Carolina 1969
MSPH - Radiological Hygiene

Memberships:

Sigma Xi (Honorary)
Alpha Chi Sigma Honorary Chemical Fraternity
Delta Omega (Public Health)
Phi Kappa Phi
Health Physic Society (Application in processing)
American Association of Physicists in Medicine
(Application in processing)

Appointments:

1963 - 1966 Nuclear Weapons Developer
U.S. Army Combat Developments Command
1966 - 1969 Consultant to TSG for Nuclear Medical
Science (MOS 3308)
1970 - Present Radiological Physicist
Fitzsimons General Hospital

CURRICULUM VITAE

31 December 1970

CANHAM, John E. Colonel, MC

Position: Commanding Officer
U. S. Army Medical Research and Nutrition Laboratory
Fitzsimons General Hospital
Denver, Colorado 80240

Born: [REDACTED]

Married: [REDACTED]

Military Service:

May 1943 - Mar 1946 Enlisted Service
Jun 1949 - Jun 1950 Intern, Letterman General Hospital
San Francisco, California
Jul 1950 - Aug 1950 Medical Resident, Letterman General
Hospital, San Francisco, California
Aug 1950 - Feb 1951 TDY to FECOM assigned to 8th Station
Hospital, Kobe, Japan. Duty involved
care and treatment of patients with
surgical and orthopedic conditions
and the running of the X-ray department.
Feb 1951 - Dec 1953 Letterman General Hospital, Resident
on the Medical Service
Jan 1954 - Jun 1956 Ward Officer, General Medical Service,
USAH, Ft. Belvoir, Va.
Jul 1956 - Dec 1956 Student, AMSS, BAMC, Ft. Sam Houston,
Texas (Advanced course)
Jan 1957 - Jul 1960 10th Field Hospital (USAH, Wurzburg,
Germany)

Duty: Jan 1957 - May 1957 - Asst. Ch.,
Medical Service
May 1957 - Jul 1960, Chief of
Medical Service

Additional Duties:

May 1957 - Jul 1960, Deputy
Hospital Commander
Oct 1957 - Jul 1960, Chief of
Outpatient and Health Services,
Wurzburg Medical Service Area
Oct 1957 - Jul 1960, Chief of
Preventive Medicine, Wurzburg
Medical Service Area
Sep 1960 - Jun 1961 Biochemistry Dept., Medical School of
Vanderbilt University, Nashville, Tenn.
for a course entitled, "Nutrition and
Metabolism".

Jul 1961 - 31 Oct 1964	Chief of Metabolic Div., USAMRNL, FGH, Denver (included in this period, was on loan to ICMND to participate in a nutrition survey in Uruguay, S.A., Feb 1962-May 1962)
Dec 1962 - Jun 1963	Monitor, Utilization Group, Surgeon General's Intravenous Nutriment Group
Jun 1963 - 1966	Monitor, Surgeon General's Intravenous Nutriment Program
31 Oct 1964 - Aug 1966	Commanding Officer, USAMRNL, FGH, Denver, Colorado
6 Jan 1966 - 13 May 66	TDY, Associate Course, Command & Gen. Staff College, Ft. Leavenworth, Kansas
Aug 1966 - Aug 1967	Commanding Officer, 121 Evac Hosp, Korea
Sep 1967 - present	Commanding Officer, USAMRNL, FGH, Denver, Colo.

Education:

	Elementary and High School, Barker Central School, Barker, New York
1943 - 1944	The Military College of South Carolina (The Citadel), Charleston, S. Carolina Two semesters, ASTP
1944	The Johns Hopkins University, Baltimore, Maryland, ASTP, 3 semesters
Oct 1945 - Jun 1949	Columbia University's College of Physicians and Surgeons, New York, N. Y.
Sep 1960 - Jun 1961	Vanderbilt University's School of Medicine, Nashville, Tenn. (Dept. of Biochem., - Nutrition and Metabolism)
Jan 66 - May 66	Assoc Course Comd & Gen Staff College, Ft. Leavenworth, Kansas

Boards:

Certified as a Specialist in Clinical Nutrition by the American Board of Nutrition

Special Activities:

1. Clinician for the ICMND Nutrition Survey - Uruguay, Feb-May 1962
2. Associate Guest Editor, Symp. on I.V.Pats - Am. J. Clin. Nutr. Jan. 1965.
3. The Surgeon General's Liaison Representative to:
 - a. Nutrition Study Section, NIH (Sep 64 - present)
 - b. Food & Nutrition Board, NRC-NAS (Oct 64 - present)
4. Member, Subcommittee on Vitamin B₆ of the Committee on Dietary Allowances of the Food & Nutrition Board, NAS-NRC (1965 to 1968)
5. Member, CSU Radiation Institute, Human Uses Radioisotope Committee, Colorado State University, Ft. Collins, Colo. (1964 to present)
6. Member of special advisory panel to Dr. J. M. May's project, "Studies in Medical-Geography - The Ecology of Malnutrition"
7. DOD representative to the White House Committee on Nutrition - Dr. J. Mayer, Chairman
8. Perform staff advisory and consultant duties for the Nutrition Branch, Preventive Medicine Division, Office of The Surgeon General
9. Invited participant in various Ad Hoc meetings conducted by FASEB under funding from ARO

Academic

Appointments:

1 July 1964

Affiliate Professor of Chemistry, Colorado
State University, Ft. Collins, Colorado

1 July 1969

Affiliate Professor, Food Science & Nutrition,
Colo. State Univ., Ft. Collins, Colo.

Membership in
Societies:

Diplomate of the American Board of Medical Examiners; American
Association for the Advancement of Science; American Medical Associ-
ation; American Institute of Nutrition, American Society for Clinical
Nutrition; American College of Clinical Nutrition; Association of
Military Surgeons; International Society of Parenteral Nutrition,
American Board of Nutrition

Publications:

1. Consolazio, C. F., Matoush, L. O., Nelson, R. A., Harding, R. S., and Canham, J. E.: The Dermal Excretion of Minerals and Its Possible Relation to Mineral Balance and Requirements. U. S. Army Medical Research and Nutrition Laboratory Report No. 271, Oct 1962.
2. Consolazio, C. F., Nelson, R. A., Matoush, L. O., Harding, R. S. and Canham, J. E.: The Sweat Excretion of Nitrogen in Relation to Balance, Environment and Physical Activity. U. S. Army Medical Research and Nutrition Laboratory Report No. 270, Oct 1962.
3. Consolazio, C. F., Nelson, R. A., Matoush, L. O., Harding, R. S. and Canham, J. E. Nitrogen Excretion in Sweat and Its Relation to Nitrogen Balance Requirements. J. of Nutr., 79: 399, 1963.
4. Consolazio, C. F., Matoush, L. O., Nelson, R. A., Harding, R. S. and Canham, J. E.: Excretion of Sodium, Potassium, Magnesium and Iron in Human Sweat and the Relation of Each to Balance and Requirements. J. of Nutr., 79: 407, 1963.
5. Nunes, W. T. and Canham, J. E.: The Effect of Varied Periodicity of Eating on Serum Lipid and Carbohydrate Tolerance in Man. Am. J. Clin. Nutr., 12: 334, 1963 (Abstract)
6. Baker, E. M., Sauberlich, H. E. and Canham, J. E.: Vitamin B₆ Requirement of the Human, Fed. Proc., 22: 322, 1963 (Abstract)
7. Canham, J. E., Nunes, W. T. and Eberlin, E. W.: Central Nervous System Manifestations of B₆ Deficiency in Normal Human Adults, Fed. Proc., 22: 322, 1963 (Abstract)
8. Consolazio, C. F., Matoush, L. O., Nelson, R. A., Harding, R. S., and Canham, J. E.: The Excretion of Nitrogen and Minerals in Sweat and Their Relationship to Balance and Requirements. Fed. Proc., 22: 550, 1963 (Abstract)
9. A report by the Interdepartmental Committee on Nutrition for National Defense: Nutrition Survey of the Republic of Uruguay, 1962. United States Government Printing Office, Washington, D. C.
10. Canham, J. E. and Sauberlich, H. E.: Chapter 15 entitled, "Vitamin B₆" for "Handbook of Nutrition" compiled by the Council on Foods and Nutrition of the AMA initially scheduled for publication in 1965 - still unpublished.
11. Canham, J.E., Nunes, W. T. and Eberlin, E. W.: Electroencephalographic and Central Nervous System Manifestations of B₆ Deficiency and Induced B₆ Dependency in Normal Human Adults. Proceedings of the 6th International Congress of Nutrition, C. F. Mills & R. Passmore, Eds., Page 587 (abstract), published by Messrs. E & S. Livingstone, Ltd., Edinburgh, Scotland, 1964.
12. Sauberlich, H. E., Baker, E. M., Canham, J. E. and Raica, N. Jr.: Vitamin B₆ Requirement of the Human, Proceedings of 6th International Congress of Nutrition, C. F. Mills & R. Passmore, Eds., Page 538 (Abstract), published by Messrs. E. & S. Livingstone, Ltd., Taviot Pl, Edinburgh, Scotland, 1964.

13. Levandoski, N. G., Baker, E. M. and Canham, J. E.: Studies on the Auto-Oxidation of L-Ascorbic Acid. (Abstract). Sixth International Congress of Biochemistry, New York City, N. Y., July 1964., Pub I.U.B., Vol. 32, Sect. V, G 176, p432, 1964.
14. Levandoski, N. G., Baker, E. M. and Canham, J. E.: A monodehydro Form of Ascorbic Acid in the Auto-Oxidation of Ascorbic Acid to Dehydroascorbic Acid. Biochemistry, 3: 1465-1469, Oct, 1964.
15. Baker, E. M., Canham, J. E., Nunes, W. T., Sauberlich, H. E. and McDowell, M. E.: Vitamin B₆ Requirement for Adult Men, Am. J. Clin. Nutr., 15: 59-66, 1964.
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26. Matoush, L. O., Nelson, R. A., Consolazio, C. F. and Canham, J. E.: Sweat Losses in Relation to Trace Mineral Balances. Fed. Proc., 24: 312, 1965 (abstract).
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37. Canham, J. E.: Chairman's Introductory Remarks and Summary of Session IV - Fat Emulsions. Proceedings of an International Symposium on Parenteral Nutrition. H. C. Meng, Ed., C. C. Thomas, Publisher - 1970.
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41. Canham, J. E.: Nutrition Program at the U. S. Army Med. Res. and Nutr. Lab. Presented at 3rd Nutr. Symposium, Walter Reed Army Institute of Res. Submitted for publication in Proceedings, May 1970.
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44. Baker, E. M., Hodges, R. E., Hood, J., Sauberlich, H. E., March, S. C. and Canham, J. E.: Metabolism of ¹⁴C and ³H Labeled L-Ascorbic Acid in Human Scurvy. Am. J. Clin. Nutr. (in press - April 1971).
45. Canham, J. E., Consolazio, C. F. and Sauberlich, H. E.: Nutrient Intake and Nutritional Status of Selected Military Populations. Presented at AIN, FASEB Symposium entitled "Nutrition Problems, USA", April 1969. Manuscript to be submitted to Military Medicine for publication.

Areas of Research: Areas of research activity has been in the following fields:

1. The effects of periodicity of eating upon normal intermediate metabolism in humans.
2. The degradation and possible utilization of cellulose in humans.
3. Have supervised the conduct and collaborated with other investigators in the performance of six studies on Vitamin B₆ metabolism in the normal adult male human including deficiency studies. These studies resulted in the original observation that vitamin B₆ deficiency in the adult can produce electroencephalographic abnormalities and convulsive seizures plus the original observation that excessive intake of vitamin B₆ can produce electroencephalographic abnormalities in the adult.
4. Have also participated in studies to determine the usability utilization and toxicity of various intravenous fat preparations.
5. Additional activities include participation with C. F. Consolazio in studies aimed at defining the extent of nutrient loss in perspiration of active adult males living in various environmental temperatures.
6. Have been responsible for the planning, coordination and supervision of Army nutrition surveys which involved various divisions of the Laboratory.
7. Additional areas of research activity have included the auto-oxidation of ascorbic acid in aqueous solutions and the relationship of these products to the normal metabolic function of ascorbic acid.

John E. Canham, Col, MC

ISOTOPE STUDIES INVOLVING THE USE OF ^{14}C CARBON OR ^3H TRITIUM
IN HUMANS, PERFORMED SINCE 1961 TO DATE

1. Tracer studies of vitamin C utilization in man, using L-Ascorbic-1- ^{14}C acid. (Use of 7 subjects) 1961-62 (30 μc per subject)
2. Effect of INH on oxalate, tryptophan and ascorbic acid metabolism. (Used ^{14}C -labeled ascorbate in 1 subject) 1962 (50 μc)
3. Metabolism of Glycine-1- ^{14}C and Glycine 2- ^{14}C . (Use of 7 subjects) 1962 (30 μc per subject)
4. Respiratory catabolism in man of the degradative intermediates of L-Ascorbic-1- ^{14}C acid (use of 3 subjects) 1963 (36 μc per subject)
5. Studies of Vitamin B₆ - ascorbic acid interrelationship utilizing L-Ascorbic-1- ^{14}C acid (used 3 subjects) 1965 (50 μc per subject)
6. Metabolism of ^{14}C - labeled pyridoxine (vitamin B₆) in man (used 2 subjects) 1965 (45 - 50 μc per subject)
7. Metabolism of ^{14}C - labeled thiamine (vitamin B₁) in man (used 1 subject) 1965 (46 μc)
8. Metabolism of L-Ascorbic-4- ^3H acid in man (used 1 subject) 1966 (100 μc)
9. Metabolism of ^{14}C -labeled cellulose in man (one subject studied) May 1966
10. Metabolism of ^{14}C -labeled thiamine (vitamin B₁) in man (used 1 subject) 1967 (43 μc)
11. Metabolism of L-Ascorbic-1- ^{14}C acid and L-Ascorbic-4- ^3H acid in human scurvy (3 subjects received ^{14}C and 2 subjects received both ^{14}C and ^3H label at Univ. of Iowa) 1967-68 (150 μc ^{14}C on initial label, 160 μc ^3H per subject, 100 μc ^{14}C during 100 day repletion period at rate of 1 μc /day. Total 250 μc ^{14}C administered over an 8-month period)
12. Vitamin A-15- ^{14}C acetate administered to 9 subjects. Total dose was 130 μc /man (label administered at Univ. of Iowa, Medical School, Iowa City, Feb. 1969)
13. Study of body composition with measurement of whole body water by administration of Tritiated water containing 600 μc ^3H each to 104 men, Ft. Carson, Colo., Nov. '63)

UNITED STATES ATOMIC ENERGY COMMISSION
APPLICATION FOR BYPRODUCT MATERIAL LICENSE
SUPPLEMENT A—HUMAN USE

Form approved.
Budget Bureau No. 38-2080.1

This page may be completed by the physician's preceptor (if any) in the medical use of radioisotopes. When the information is not furnished by the preceptor, the name and present address of the preceptor (if any) should be shown in item 12 below.

9. (a) USING PHYSICIAN'S NAME

John E. Canham, MC

(b) NAME AND ADDRESS OF APPLICANT (If different from 9(a))

Commanding Officer
U. S. Army Medical Research and Nutrition Laboratory
Fitzsimons General Hospital, Denver, Colorado 80242

10. CLINICAL TRAINING AND EXPERIENCE OF PHYSICIAN WHO WILL USE BYPRODUCT MATERIAL

(A) ISOTOPE	(B) CONDITION(S) DIAGNOSED OR TREATED	(C) NUMBER OF CASES	(D) TYPE OF PARTICIPATION FOR ALL CASES IN COLUMN B (circle applicable num- bers of items in accordance with key set forth below)
I-131	Diagnosis of thyroid function	20-25	(1) 2 3 4
	Treatment of hyperthyroidism		1 2 3 4
	Treatment of thyroid cancer		1 2 3 4
	Treatment of cardiac conditions		1 2 3 4
	Brain tumor localization		1 2 3
	Blood determinations		1 2 3 4
	Kidney function		1 2 3 4
	Others:		1 2 3 4
P-32 Soluble	Treatment of polycythemia and leukemia	2	(1) 2 3 4
	Brain tumor localization		1 2 3 4
	Treatment of bone metastases		1 2 3 4
	Others:		1 2 3 4
P-32 CrPO ₄	Treatment of prostatic cancer		1 2 3 4
	Treatment of cervical cancer		1 2 3 4
	Treatment of pleural effusions and/or ascites		1 2 3 4
	Others:		1 2 3 4
Au-198 Colloid	Treatment of prostatic cancer		1 2 3 4
	Treatment of cervical cancer		1 2 3 4
	Treatment of pleural effusions and/or ascites		1 2 3 4
	Others:		1 2 3 4
Cr-51	Blood determinations		1 2 3 4
	Others:		1 2 3 4
			1 2 3 4
Other Isotopes		24	1 2 3 4
	Co ⁶⁰ and Vitamin B ¹²		(1) (2) 3 (4)

Key to above numbers (column D)

Active Participation and Discussion in the:

1. Examination of patients to determine suitability for radioisotope diagnosis and/or treatment and recommendations on dosage to be prescribed.
2. Collaboration in calibration and administration of dosages including related measurements and plotting of data.
3. Active period of training and experience of sufficient duration to permit followup of patients through treatment and posttreatment period including reevaluation as to effectiveness and complications.
4. Study and discussion of case histories to establish most efficacious diagnostic and/or therapeutic techniques for this radioisotope use.

11. TOTAL NUMBER OF HOURS OF PARTICIPATION IN CLINICAL TRAINING 500 hours

12. THE TRAINING AND EXPERIENCE INDICATED ABOVE WAS OBTAINED UNDER THE SUPERVISION OR GUIDANCE OF

John E. Canham, M.D.
Fitzsimons General Hospital, Denver, Colorado
USA Med Res & Nutr Lab
Fitzsimons General Hospital, Denver, Colorado
(Name of physician preceptor) AT (Institution)

John E. Canham
JOHN E. CANHAM (signature)

TRAINING AND EXPERIENCE OF EACH INDIVIDUAL NAMED IN ITEM 4		Supplemental sheets if necessary		
B. TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB (Circle answer)	FORMAL COURSE (Circle answer)
a. Principles and practices of radiation protection	U.S. Army Hosp. Wurzburg & Ft. Sam Vanderbilt Univ. School of Med.	2½ yrs 13½ mos	Yes No Yes No	Yes No
b. Radioactivity measurement standardization and monitoring techniques and instruments	Vanderbilt University School of Medicine	4½ mos formal 9 mos on job	Yes No Yes No	Yes No
c. Mathematics and calculations basic to the use and measurement of radioactivity	Same as b. above		Yes No	Yes No
d. Biological effects of radiation	Same as b. above		Yes No	Yes No

9. EXPERIENCE WITH RADIATION (Actual use of radioisotopes or equivalent experience.)			
ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE
Co ⁶⁰	0.5uc/patient or subject	Nutr Cl, Vanderbilt Univ	9 mos
Co ⁶⁰		Dept. Biochem., Vanderbilt	4 mos
See Attached Sheet			

TYPE OF USE
Studies on Vit. B12 requirements & half life in humans
" " "

10. RADIATION DETECTION INSTRUMENTS (Use supplemental sheets if necessary)					
TYPE OF INSTRUMENTS (Include make and model number of each)	NUMBER AVAILABLE	RADIATION DETECTED	SENSITIVITY RANGE (mr/hr)	WINDOW THICKNESS (mg/cm ²)	USE (Monitoring, survey, etc.)

11. METHOD, FREQUENCY, AND STANDARDS USED IN CALIBRATING INSTRUMENTS LISTED ABOVE.

12. FILM BADGES, DOSIMETERS, AND BIO-ASSAY PROCEDURES USED. (For film badges, specify method of calibrating and processing, or name of supplier.)

INFORMATION TO BE SUBMITTED ON ADDITIONAL SHEETS	
13. FACILITIES AND EQUIPMENT. Describe laboratory facilities and remote handling equipment, storage containers, shielding, fume hoods, etc. Explanatory sketch of facility is attached. (Circle answer)	Yes No
14. RADIATION PROTECTION PROGRAM. Describe the radiation protection program including control measures. If application covers sealed sources, submit leak testing procedures where applicable, name, training, and experience of person to perform leak tests, and arrangements for performing initial radiation survey, servicing, maintenance and repair of the source.	
15. WASTE DISPOSAL. If a commercial waste disposal service is employed, specify name of company. Otherwise, submit detailed description of methods which will be used for disposing of radioactive wastes and estimates of the type and amount of activity involved.	

CERTIFICATE (This item must be completed by applicant)	
16. THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATE ON BEHALF OF THE APPLICANT NAMED IN ITEM 1, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PART 30, AND THAT ALL INFORMATION CONTAINED HEREIN, INCLUDING ANY SUPPLEMENTS ATTACHED HERETO, IS TRUE AND CORRECT TO THE BEST OF OUR KNOWLEDGE AND BELIEF.	
Date <u>10 December 1969</u>	By: <u>John E. Canham, COL, MC</u> Applicant named in item 1
	By: <u>J. E. Henderson, COL, VC</u> Chief, Radioisotope Br., USAF/AGL Title of certifying official

WARNING.—18 U. S. C., Section 1001, Act of June 25, 1948; 62 Stat. 749; makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

TRAINING AND EXPERIENCE

OF EACH INDIVIDUAL NAMED IN ITEM 4 (Use

supplemental sheets if necessary)

B. TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB (Circle answer)	FORMAL COURSE (Circle answer)
a. Principles and practices of radiation protection	U.S. Army Hosp. Murkumburg & Ft. Sam Vanderbilt Univ. School of Med.	2 1/2 yrs 13 1/2 mo	(Yes) No	Yes No
b. Radioactivity measurement standardization and monitoring techniques and instruments	Vanderbilt University School of Medicine	4 1/2 mo 1 formal 9 mo. on job	(Yes) No	(Yes) No
c. Mathematics and calculations basic to the use and measurement of radioactivity	Same as b. above		(Yes) No	Yes No
d. Biological effects of radiation	Same as b. above		Yes No	Yes No

9. EXPERIENCE WITH RADIATION. (Actual use of radioisotopes or equivalent experience.)

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
Co ⁶⁰	0.5uc/patient or subject	Nutrition Clinic, Vanderbilt University.	9 months	Studies on Vitamin B ₁₂ requirements & half life
Co ⁶⁰		Dept. Biochemistry Vanderbilt University.	4 months	in humans.
C-14, Cr-61, I-131		"	4 months	Relationship B ₁₂ to Calcium in B ₁₂ absorption
P-32, H ₃ , K-42		"		Laboratory experience

10. RADIATION DETECTION INSTRUMENTS. (Use supplemental sheets if necessary.)

TYPE OF INSTRUMENTS (Include make and model number of each)	NUMBER AVAILABLE	RADIATION DETECTED	SENSITIVITY RANGE (mc/hr)	WINDOW THICKNESS (mg/cm ²)	USE (Monitoring, surveying, measuring)

11. METHOD, FREQUENCY, AND STANDARDS USED IN CALIBRATING INSTRUMENTS LISTED ABOVE.

12. FILM BADGES, DOSIMETERS, AND BIO-ASSAY PROCEDURES USED. (For film badges, specify method of calibrating and processing, or name of supplier.)

INFORMATION TO BE SUBMITTED ON ADDITIONAL SHEETS

13. FACILITIES AND EQUIPMENT. Describe laboratory facilities and remote handling equipment, storage containers, shielding, fume hoods, etc. Explanatory sketch of facility is attached. (Circle answer) Yes No

14. RADIATION PROTECTION PROGRAM. Describe the radiation protection program including control measures. If application covers sealed sources, submit leak testing procedures where applicable, name, training, and experience of person to perform leak tests, and arrangements for performing initial radiation survey, servicing, maintenance and repair of the source.

15. WASTE DISPOSAL. If a commercial waste disposal service is employed, specify name of company. Otherwise, submit detailed description of methods which will be used for disposing of radioactive wastes and estimates of the type and amount of activity involved.

CERTIFICATE (This item must be completed by applicant)

16. THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATE ON BEHALF OF THE APPLICANT NAMED IN ITEM 1, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PART 30, AND THAT ALL INFORMATION CONTAINED HEREIN, INCLUDING ANY SUPPLEMENTS ATTACHED HERETO, IS TRUE AND CORRECT TO THE BEST OF OUR KNOWLEDGE AND BELIEF.

John E. Canham

Applicant named in item 1

Date: _____

By: _____

Title of certifying official

CURRICULUM VITAE

NAME: Morrissey, Robert L.

ADDRESS: USAMRIID, Radioisotope Branch
Box 327
Fitzsimons General Hospital
Denver, Colorado 80240

PHONE: 303--366-5311, Ext. 26111 (Work)

MARITAL STATUS: [REDACTED]

NUMBER CHILDREN: [REDACTED]

CITIZENSHIP: American

Education

High School - I graduated from Erie Community High School at Erie, Illinois in June of 1958, ranking 7th in a class of 56.

College - I received the B.S. (Veterinary Medicine) on June 15, 1963 and the D.V.M. on June 19, 1965 from the University of Illinois, ranking 5th in a class of 33.

Post Doctoral - I received the Ph.D degree in Physical Biology, with minors in Biochemistry and Animal Physiology from Cornell University in June of 1970.

Military

From October 1968 to August 1970, I was stationed at the U. S. Army Medical Research Laboratory at Fort Knox, Kentucky. I was assigned to the Pathology Division under the supervision of MAJ D. K. Hysell, who is a board certified Veterinary Laboratory Animal Medicine Specialist with a M.S. in Veterinary Pathology. My duties included clinical work on laboratory animals, supervision of the clinical pathology laboratory and the conception, proposal and accomplishment of in house independent research projects.

College Awards, Fellowships, Honors, etc.

- 1. Hunter Scholarship (\$1800) during 1958-60.
- 2. Work Scholarship (tuition) during 1961-62.
3. Illinois Trotters Association Award (\$500) during 1962-63.
4. Pfizer Award (\$400) during 1964-65.
5. Recognized as "student of the month" in the College of Agriculture newsletter sometime during 1959.
6. Appointed to the Illinois Veterinarian staff during my 2nd, 3rd, and 4th years of veterinary training, serving as co-editor during the final year.
7. Elected as class representative to the student loan fund board during 1964 and 1965.
8. Received into the MU Chapter of Phi-Zeta (Veterinary scholastic honor society) in 1964.
9. Received an NIH post doctoral fellowship which started in June of 1965 and continued through August of 1968, during which time I completed most of the requirements for the Ph.D. degree.

Research Experience

1. I first became involved in research while working for Prof. Kenton A. Kendall, who was studying the metabolic factors affecting the parturient paresis syndrome in dairy cattle. My duties included collection of specimens (mainly blood and urine) and assaying them for a variety of compounds or electrolytes, including calcium, inorganic phosphate, sodium, potassium, glucose, galactose, alkaline and acid phosphatase, vitamin A, and paper chromatography of carbohydrates. I also did some library research for the project. I worked in this capacity between June of 1962 and June of 1965, receiving \$1.50 per hour at the start and \$2.40 per hour at the finish of the period.

2. In June of 1964 I started a special problems course under Dr. A. R. Twardock. The work involved perfusion of guinea pig placentae under various conditions to study the placental transfer rates for 45 calcium and 85 -strontium and placental discrimination against strontium. Preliminary data from these studies provided the basis for the NIH fellowship application.

3. In September of 1965, I transferred the NIH fellowship to Cornell University where I eventually became involved in the study of intestinal calcium absorption under the sponsorship of Dr. Robert H. Wasserman. My thesis was entitled "Regulation of Intestinal Calcium Absorption" and a summary of the research is enclosed.

Other Experience

During my earlier college career I held part time and(or) summer jobs at the Poultry Farm, Dairy Farm, and Large Animal Veterinary Clinic.

Professional References

1. Dr. Robert H. Wasserman, Dept. of Physical Biology, NYS Veterinary College, Cornell University, Ithaca, N.Y. 14850.
2. Dr. Cyril L. Comar, Dept. of Physical Biology, NYS Veterinary College, Cornell University, Ithaca, N.Y. 14850.
3. Dr. Charles E. Stevens, Dept. of Veterinary Physiology, NYS Veterinary College, Cornell University, Ithaca, N.Y. 14850.
4. Dr. Walter L. Nelson, Dept. of Biochemistry, Cornell University, Ithaca, N.Y. 14850.
5. Major David K. Hysell, USAMRL, Pathology Division, Fort Knox, Ky. 40121.
6. Dr. A. Robert Twardock, Dept. of Physiology, College of Veterinary Medicine, University of Illinois, Urbana, Illinois 61801.
7. Dr. Roger P. Link, Dept. of Physiology, College of Veterinary Medicine, University of Illinois, Urbana, Ill. 61801.
8. Dr. Erwin Small, Small Animal Clinic, College of Veterinary Medicine, University of Illinois, Urbana, Ill. 61801.
9. Dr. Kenton A. Kendall, Dept. of Dairy Science, College of Agriculture, University of Illinois, Urbana, Ill. 61801.
10. Dr. H. S. Scott, Poultry Science Division, College of Agriculture, University of Illinois, Urbana, Illinois 61801.
11. Dr. Harry Hardenbrook, Large Animal Clinic, College of Veterinary Medicine, University of Illinois, Urbana, Ill. 61801.

Non-Professional References

1. Mr. Joe Slaymaker, RFD, Erie, Illinois
2. Pastor Herman Eckelmann, 117 Christopher Circle, Ithaca, New York 14850.
3. Mr. James Skinner, 446 Southland Drive, Radcliff, Ky. 40160.

Community Activities

1. I was Treasurer of Faith Bible Church (117 Christopher Circle, Ithaca, N.Y. 14850) during 1967 and 1968 and also Sunday School Superintendant during 1968.
2. From August 1969 to August 1970, served on the Board of Directors for Military Missionaries Inc. of Kentucky (446 Southland Drive, Radcliff, Ky.) and also as Treasurer for the Youth Activity Center which the mission was building.

Publications

1. Regulation of intestinal calcium absorption. R. L. Morrissey. Cornell University Ph.D thesis, June 1970.
2. Adaptation, calcium binding protein (CaBP) and the intestinal absorption of calcium. R. L. Morrissey and R. H. Wasserman. Federation Proceedings 29: 847 Abs. 3405, 1970.
3. Calcium binding protein: Endogenous induction. R. L. Morrissey, D. K. Hysell and W. L. Janik. USAMRL Report No. 859, March 1970.
4. Control of calcium absorption: Influence of vitamin D₃ hydroxylation on the calcium binding activity of chick duodenal mucosa. R. L. Morrissey, D. K. Hysell and W. L. Janik. USAMRL Report No. , July 1970.
5. Effect of heparinized saline infusion and hypotension on calcium homeostasis in the dog. R. L. Morrissey, N. I. Birndorf, C. E. Shields and D. K. Hysell. USAMRL Report No. , July 1970.
6. A case of multiple parasitism in a sooty mangabey (Cercopithecus torquatus atys). D. K. Hysell, F. L. Del Greco, W. L. Janik and R. L. Morrissey. USAMRL Report No. 853.

Papers Submitted for Publication

1. Adaptation, calcium binding protein (CaBP) and the intestinal absorption of calcium. R. L. Morrissey and R. H. Wasserman. Amer. J. Physiol.
2. Transferrins of the Sooty Mangabey (Cercopithecus torquatus atys). R. L. Morrissey, D. K. Hysell and W. L. Janik. USAMRL Report No. , August 1970.

TRAINING AND EXPERIENCE OF EACH INDIVIDUAL NAMED IN ITEM 4 (Use supplemental sheets if necessary)

B. TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB (Circle answer)	FORMAL COURSE (Circle answer)
a. Principles and practices of radiation protection	Univ. of Illinois	1 yr	<input checked="" type="radio"/> Yes No	Yes No
b. Radioactivity measurement standardization and monitoring techniques and instruments	Cornell Univ.	3 yrs	<input checked="" type="radio"/> Yes No	<input checked="" type="radio"/> Yes No
c. Mathematics and calculations basic to the use and measurement of radioactivity	USAMRII, Ft. Knox, KY	2 yrs	<input checked="" type="radio"/> Yes No	Yes No
d. Biological effects of radiation			Yes No	Yes No

9. EXPERIENCE WITH RADIATION (Actual use of radioisotopes or equivalent experience)

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
45Ca	.1 mc	U of Ill. and Cornell U	4 yrs.	Ca & Sr metabolism
85Sr	.1 mc	U of Ill. and Cornell U	4 yrs.	" " "
47Ca	.1 mc	Cornell U	3 yrs.	Ca absorption
3H	.01 mc	USAMRII, Ft. Knox, KY	6 mo.	Vit. D ₃ metabolism

10. RADIATION DETECTION INSTRUMENTS (Use supplemental sheets if necessary)

TYPE OF INSTRUMENTS (Include make and model number of each)	NUMBER AVAILABLE	RADIATION DETECTED	SENSITIVITY RANGE (mr/hr)	WINDOW THICKNESS (mg/cm ²)	USE (Monitoring, surveying, measuring)

11. METHOD, FREQUENCY, AND STANDARDS USED IN CALIBRATING INSTRUMENTS LISTED ABOVE.

12. FILM BADGES, DOSIMETERS, AND BIO ASSAY PROCEDURES USED. (For film badges, specify method of calibrating and processing, or name of supplier.)

INFORMATION TO BE SUBMITTED ON ADDITIONAL SHEETS IN DUPLICATE

13. FACILITIES AND EQUIPMENT. Describe laboratory facilities and remote handling equipment, storage containers, shielding, fume hoods, etc. Explanatory sketch of facility is attached. (Circle answer) Yes No
14. RADIATION PROTECTION PROGRAM. Describe the radiation protection program including control measures. If application covers sealed source, submit leak testing procedures where applicable, name, training, and experience of person to perform leak tests, and arrangements for performing initial radiation survey, servicing, maintenance and repair of the source.
15. WASTE DISPOSAL. If a commercial waste disposal service is employed, specify name of company. Otherwise, submit detailed description of methods which will be used for disposing of radioactive wastes and estimates of the type and amount of activity involved.

CERTIFICATE (This item must be completed by applicant)

16. THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATE ON BEHALF OF THE APPLICANT NAMED IN ITEM 1, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PART 30, AND THAT ALL INFORMATION CONTAINED HEREIN, INCLUDING ANY SUPPLEMENTS ATTACHED HERETO, IS TRUE AND CORRECT TO THE BEST OF OUR KNOWLEDGE AND BELIEF.

Robert L. Morrissey
Applicant named in item 1

Date 6 Sept 1970

By:

John E. Canham
Title of certifying official

JOHN E. CANHAM, COL, MC, Commanding,

WARNING.—18 U. S. C., Section 1001, Act of June 25, 1948; 62 Stat. 749, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

APPENDIX II

RADIATION PROTECTION

1. Hospital Regulation 40-604, dated 15 November 1972. Radiation Safety (Incl 1).
2. Special Order 218, Fitzsimons General Hospital, dated 29 September 1970 (Incl 2).
3. Leak Test Instructions: Cesium-137 Sources. (Incl 3).
4. Storage, Handling and Transfer Facilities for Cesium-137 Sources. (Incl 4).
5. Radiological Health and Safety Procedures to be used with Cesium-137 Brachytherapy Sources. (Incl 5).
6. Nursing Service Personnel Instructions for Management of Brachytherapy Patients. (Incl 6).

FITZSIMONS GENERAL HOSPITAL
Denver, Colorado 80240

*HOSPITAL REGULATION
NUMBER 40-604

15 November 1972

MEDICAL SERVICES

RADIATION SAFETY

1. Purpose. To outline the duties and responsibilities of the Radiation Protection Officer at this installation.
2. General. The term "radiation" as used herein encompasses all forms of ionizing radiation (x-ray machines, radioisotopes and other by-products and/or fissionable materials).

3. Responsibilities.

a. The Installation Commander is ultimately responsible for insuring safe usage, storage and disposal of all sources of ionizing radiation and for enforcing measures as prescribed by The Surgeon General, the Atomic Energy Commission and other technical services. Specific references are cited in paragraph 4 and in various Department of the Army and SGO Circulars.

b. It will be the responsibility of the Radiation Protection Officer to advise the Commander on matters of radiation safety and to point out hazardous situations or practices contrary to accepted operating procedures and regulations. To fulfill this requirement, the Radiation Protection Officer has the authority to inspect any facility on this post where ionizing radiation hazards could exist. His specific duties are as follows:

(1) Insure that a high level of instruction exists for new personnel relative to safe working practices.

(2) Investigate the nature and degree of radiation injuries or abnormal exposure to determine the cause and make recommendations to prevent recurrence.

(3) Observe operational procedures to insure that radiation exposure of personnel is kept as far below the radiation protection guides as possible.

(4) Assure that personnel monitoring devices are used where prescribed and that permanent records are kept of the results.

*This Hospital Regulation supersedes HR 40-604, 18 January 1971.

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HR 40-604
15 November 1972

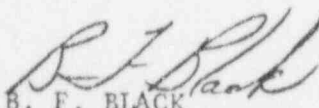
- (5) Assure that warning signs are in place when and wherever required.
- (6) Review and countersign procurement requests for radioactive material and maintain records of the amount and location of all sources of ionizing radiation, as outlined in paragraph 2, Hospital Regulation 40-602.
- (7) Review radiation surveys and records of such surveys maintained in the isotope laboratories, including descriptions of recommended corrective measures.
- (8) Review protocols of radioisotope studies, procedures or treatments at this installation.
- (9) Assay radiation hazards and give radiologic clearance prior to post-mortem examinations, or embalming by the mortician, in cases of all persons dying within six months after radioisotope therapy.
- (10) Call special meeting of the Isotope Committee of Fitzsimons General Hospital when discrepancies are uncovered in the handling of radioactive materials.

4. References.

- | | |
|---------------|--|
| a. AR 40-14. | e. TB MED 62. |
| b. AR 40-37. | f. TB MED 249. |
| c. AR 700-52. | g. TB MED 254. |
| d. AR 755-15. | h. Fed Reg, Vol 22 #19, Title 10,
Chapter 1, Part 20. |

MEDEO-X

FOR THE COMMANDER:


B. F. BLACK
Major, MSC
Adjutant

DISTRIBUTION:

"B"

Plus 1 ea - B50

DEPARTMENT OF THE ARMY
FITZSIMONS GENERAL HOSPITAL
Denver, Colorado 80240

SPECIAL ORDERS
NUMBER 218
EXTRACT

29 September 1970

25. TC 453. Following individual APPOINTED/DESIGNATED/CERTIFIED as indicated.

WHITE, CHARLES E [REDACTED] LTC Hq Comp FGH (WOQ2AA) MS

Authority: NA

Appointed as: Post Radiation Protection Officer

Period: NA Purpose: NA Effective date: 29 Sep 70

Special Instructions: (c) Vice King, Gerald A 077-32-0585 MAJ Hq Comp FGH
(WOQ2AA) MC.

26. TC 453. Following individual APPOINTED/DESIGNATED/CERTIFIED as indicated.

KING, GERALD A [REDACTED] MAJ Hq Comp FGH (WOQ2AA) MC

Authority: NA

Appointed as: Alternate Post Radiation Protection Officer

Period: NA Purpose: NA Effective date: 29 Sep 70

Special Instructions: NA.

27. TC 469. Following orders are changed as indicated.

Action: Revocation So much of: Para 35 SO 196 this Hq CS

Pertaining to: Convalescent Leave of FOX, ROBERT G [REDACTED] SP4 94B20
MHC FGH (WOQ2AA)

Action: Revocation So much of: Para 19 SO 215 this Hq CS

Pertaining to: Convalescent Leave of FOX, ROBERT [REDACTED] SP4
94B20 MHC FGH (WOQ2AA)

28. TC 453. Following individuals APPOINTED/DESIGNATED/CERTIFIED as indicated.

STEVENS, CHARLES T	[REDACTED]	LTC	1542	MHC FGH (WOQ2AA)	IN
ROZANSKI, GORDON P	[REDACTED]	MAJ	Do	Do	Do
CARR, JAMES L	[REDACTED]	CPT	Do	Do	Do
POTTS, BRUCE	[REDACTED]	Do	3448	Do	AN
GRANT, DANIAL A	[REDACTED]	1LT	1542	Do	IN
JANKLOW, FREDRIC V	[REDACTED]	Do	1193	Do	FA
NELSON, CARL	[REDACTED]	Do	1542	Do	IN
PFEIFFER, RICHARD L	[REDACTED]	Do	1193	Do	FA
JOHNSON, KENT E	[REDACTED]	Do	0221	Hq Comp FGH (WOQ2AA)	SC

Authority: Chap 15 AR 37-103 and Appendix I FM 14-3

Appointed as: Class "A" Agent Officer to the F&A Officer FGH

Period: Sep 70

Purpose: To perform monthly cash and/or check payments of salaries to
individuals assigned to MHC FGH (WOQ2AA)

Over, Para 28, SO 218, 29 Sep 70, FGH, Cont

Para 28, SO 218, 29 Sep 70, FGH, Cont

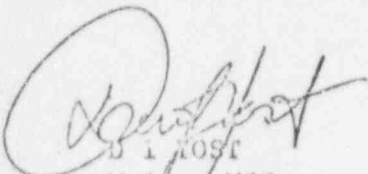
Effective date: 29 Sep 70

Special Instructions: (c) Agent will be notified of payday and time of payroll pickup through the installation Daily Bulletin. Individual appointment orders and ID Card must be presented to the F&A Officer or Deputy at the time of obtaining unit payrolls and funds. Agents obtaining cash must be accompanied by an armed guard prior to the release of funds. It is suggested that check agents be armed. Funds will not be commingled or entrusted to others for any purpose. Additional instructions will be provided on receipt of funds,

FOR THE COMMANDER:

OFFICIAL:

B F BLACK
Major, MSC
Adjutant



D 1 POST
Major, MSC
Asst Adjutant

DISTRIBUTION:

33 - Off (Para 25 & 26 & 28) 3 ea
20 - Pers Actions
22 - Off 201
10 - CO MHC
11 - F&AO
6 - Str Actg
2 - APO
2 - Adj
1 - Enl Eval
1 - Asg Ofc
1 - Plans & Ing (SGM Lesser)

MEMORANDUM FOR RECORD

SUBJECT: Leak Test Cesium-137 Brachytherapy Source

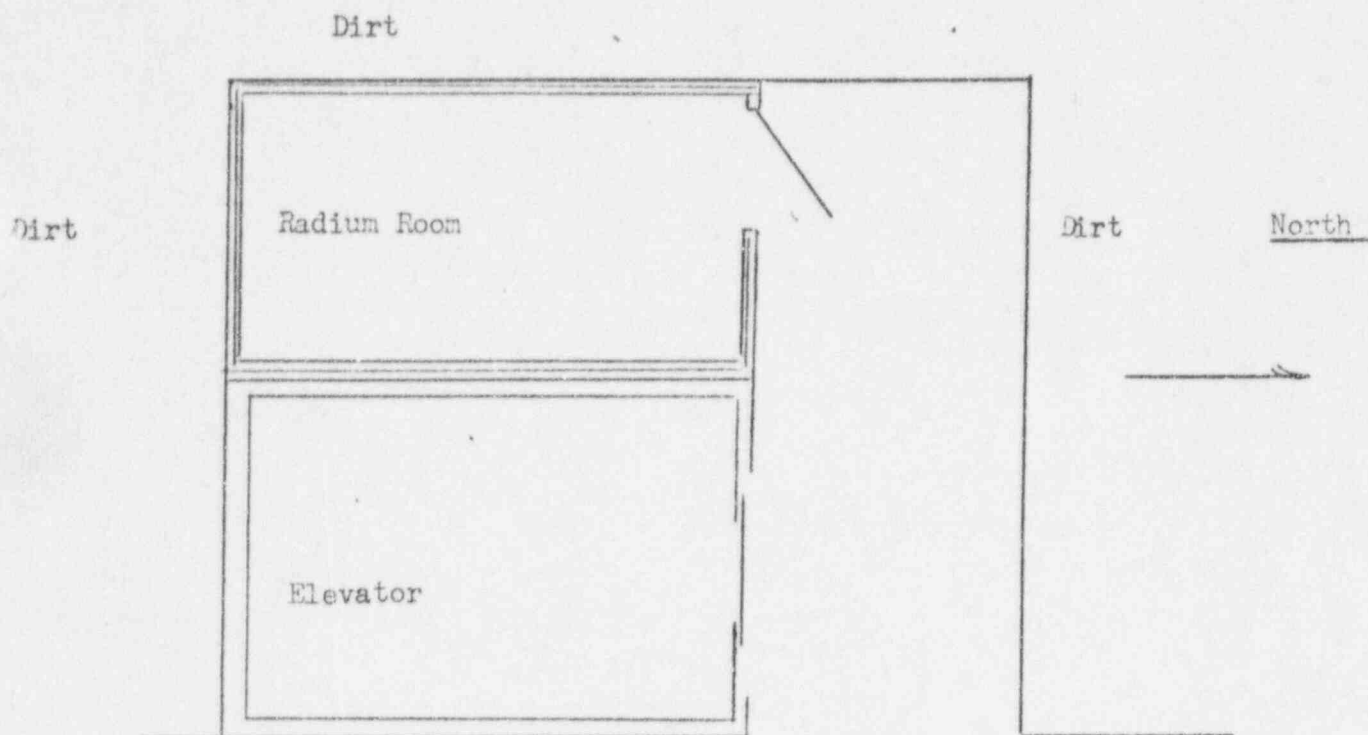
The following procedure will be used in leak testing all Cesium-137 Brachytherapy Sources at Fitzsimons General Hospital.

- a. With the forceps (Radium Chemical No. 405) remove the source to be leak tested from the Cesium-137 storage safe and place on the working tray behind the adjacent "L" Block.
- b. Using the forceps, rapidly wipe the source back and forth on a small piece of tissue moistened with ethanol or water until the entire surface has been wiped. Keep the source behind the "L" Block at all times.
- c. Return the source to storage; place the moistened tissue in an identified test tube and seal; prepare for counting in the Picker Nuclear Autowell, Model 600-125 located in the Nuclear Medicine Service.
- d. Report results in microcuries of activity recovered. If the amount is in excess of 0.005 microcuries, notify the Radiation Protection Officer, Ext. 26245.

STORAGE, HANDLING AND TRANSFER FACILITIES FOR CESIUM-137
BRACHYTHERAPY SOURCES

1. Storage Safe. All Cesium-137 sealed sources will be housed in a locked safe manufactured for that purpose by the Nuclear Products Division, 37 Center, St. Paul, Minnesota 55101. The safe is 11 in x 11 in x 12 $\frac{1}{2}$ in; weight: 600 pounds; 4 drawers each containing a lead block drilled to accommodate the anticipated sources; shielded by 8.5 cm of lead in all directions.
2. Storage Area: The locked safe will be placed in the existing Radium Vault: A room located underground opening onto a pedestrian tunnel between buildings 500 (The main hospital) and building 511 (Nuclear Medicine Service and Administrative Offices). A diagram of the radium vault is attached.
3. Handling Equipment: All sources are handled with special forceps permitting sources to be handled at a distance of 14 inches away from the hands. (Radium Chemical No. 405) Sources are retrieved directly from the storage safe to a working area all behind a Standard "L" Block. (Radium Chemical No. 462).
4. Transporting Equipment: Assembled source configurations for after-loading techniques are transported to the ward in a wheeled lead pig manufactured and purchased for that purpose from Radium Chemical. The transporter has been used for several years to transport radium, it has two inches of lead shielding in all directions. (Federal Stock No. 6525-M00-0325 Cart, Radium, Rubber Tires).

Level: Subterranean



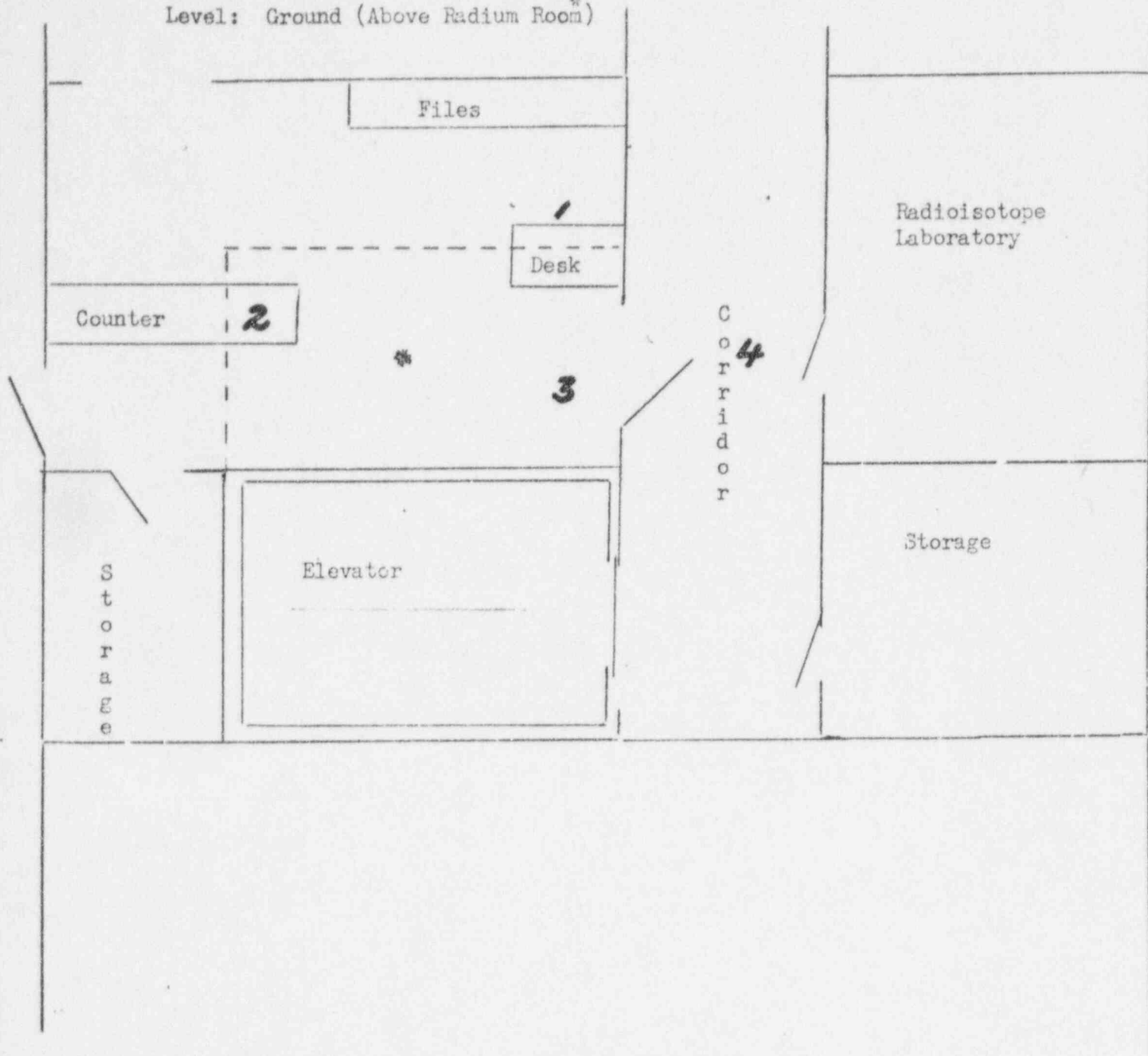
Pedestrian Tunnel
Bldg 500 to Bldg 511

Dirt

Levels of Radiation with Present Inventory of Radium

	Position	Level	
1.	Door	0.05 mR/hr	(Background)
2.	Elevator	0.05 mR/hr	(Background)
3.	Above Ra. Room	0.04 mR/hr	(Background)

Level: Ground (Above Radium Room*)



Levels of Radiation: With Current Inventory of Ra-226

1. Desk	0.05	mR/hr
2. Counter	0.04	mR/hr
3. Floor	0.04	mR/hr
4. Corridor	0.04	mR/hr

* Position of Radium Room Indicated by Broken Lines.

APPENDIX III

Literature pertaining to Amersham/Searle Cesium-137 Brachytherapy
Sources

35871

RADIOLOGICAL HEALTH AND SAFETY PROCEDURES TO BE USED
WITH CESIUM-137 BRACHYTHERAPY SOURCES

1. Cesium-137 brachytherapy sources will be stored when not in use in the Cesium Storage Safe, Radium Vault, Pedestrian Tunnel. (Building 500 to Building 511).
2. Cesium-137 sources will be removed from the safe and prepared for use using the handling forceps provided and working behind the lead "L" block (provides 2 inches of lead shielding).
3. Handlers of the sources will wear both the normal film badge attached to his garments near the waistline and a wrist badge.
4. Transportation of the sources to patient care areas will be by use of the wheeled transport "pig" only (2 inches of lead shielding provided). The transport "pig" is located in the Radium Vault.
5. Sources will be leak tested at 3-year intervals; however, they will be examined for physical damage each time they are removed and returned to the storage safe.
6. Levels of radiation at strategic locations around the storage vault will be monitored monthly and appropriate records maintained.
7. While sources are on the ward in use, daily monitoring of radiation levels around the patient's room will be made.
8. Standing Operating Procedures, providing special instructions to the nursing staff, will be provided to the ward prior to the patient's arrival. Copies of these instructions are available in both the Radiation Therapy Service (23290) or the Radiation Protection Office (26245).
9. Film badges or pocket dosimeters will be issued to those personnel involved in direct care of the patient undergoing Cesium therapy.

Health Physics Aspects of Nursing Care
of Radiation Therapy Patients
with Sealed Sources

1. Purpose. To familiarize the nursing staff with their responsibilities to the patient and themselves in the prevention of unnecessary exposure to radiation when sealed radiation sources are used.

2. General.

a. A sealed radioactive source is one in which the radioactive material has been encapsulated in a metal tube which is then sealed. Once this source has been removed from the patient there is no longer a source of radiation in the patient. Normally there is no contamination on the linen, utensils, room, toilet facilities or patient unless the source is in some manner mechanically ruptured.

b. If any of the following should occur notify the Radiation Protection Officer (Ext 23290 or 422-0554) AND the physician who administered the radioactive material.

- (1) Major Surgery
- (2) Transfer of the patient
- (3) Death

3. Specific Guidance.

a. Place the patient in a private room with the bed near the outside wall of the room. When it is necessary, two radiation therapy patients may be placed in the same room. A non-radiation therapy patient should not be in the same room with a radiation therapy patient.

b. Consistent with adequate care for the patient, carry out only minimal nursing procedures close to the patient. If the patient's clinical status requires constant observation, rotate personnel required to perform adequate nursing care in order to minimize exposure to personnel. The patient's bed should be approached only when required by nursing duties.

c. Wear your film badge when entering the area. Do not use the film badge of another employee. Film badges may be obtained by calling the Radiation Protection Officer (Ext 23290).

d. Personnel are not to remain in the room unless engaged in a specific activity. Custodial, utility, maintenance, and food service personnel should not enter the room unless they receive permission and instructions from the ward nurse.

e. A television set, telephone, books, etc., may be provided the patient.

f. Excreta, linens, and other equipment may be handled in the routine manner.

g. Special handling of the food tray is not required.

h. In the event of a suspected loss or dislodgment of the sealed source:

(1) Notify the physician who administered the source.

(2) Notify the Radiation Protection Officer (Ext 23290 or 422-0554).

(3) Do not remove any containers or linen from the room, nor flush the toilet, or use the sink.

(4) If the radioactive source is located it must be handled only with the longest forceps available and returned to the shielded container left in the patient's room.

i. The Radiation Protection Officer will monitor the patient area and will indicate a "safe-distance" line for visitors.

j. The patient may have visitors. Except for the greeting, the visitor should stay on the "safe" side of the line indicated on the floor.

k. If the patient dies, notify the physician who administered the source. The source will be removed before the body is taken to the morgue.



Amersham/Searle

AMERSHAM/SEARLE CORPORATION
AN ACTIVITY OF G. D. SEARLE & CO. AND THE RADIOCHEMICAL CENTRE

Cesium-137 Sources for Interstitial and Intracavitary Radiotherapy

CESIUM-137

Half-life—30 years. Gamma energy—0.66MeV (from ^{137m}Ba).

SOURCE CONSTRUCTION

A stable insoluble cesium-137 compound in powder form is doubly encased in iridium hardened platinum. Inner containers (10% Ir/Pt) are sealed by brazing; outer containers (20% Ir/Pt.) by autogenous welding. For extra wear resistance the trocar points on the needles are 25% Ir/Pt.

Dimensional tolerances:

external length $\pm 0.2\text{mm}$ of nominal

external diameter $\pm 0.05\text{mm}$ of nominal

SOURCE ACTIVITY AND STRENGTH

To give a useful life of about ten years cesium-137 appliances are usually supplied with activities 5-15% above nominal. Normally the activities of a batch of sources of one type supplied at one time will fall within $\pm 2\%$ of the mean measured activity of the batch.

Source strength is expressed as one of the following:

- Milligrams radium-226 equivalent (the weight in milligrams of a radium-226 point source shielded by 0.5mm platinum giving the same exposure rate at 25cm in air).
- Equivalent activity millicuries cesium-137 (the activity of a cesium-137 point source giving the same exposure rate at the same distance from the center of the source).

A Test Report is issued with each source or batch of sources quoting the measured value. If required, appliances can be calibrated for an extra charge, and in such cases a Certificate of Measurement is issued.

DISTRIBUTION OF ACTIVITY

The uniformity of distribution of each appliance is checked by autoradiography.

TESTS FOR LEAKAGE AND CONTAMINATION

Each appliance is tested for surface contamination by a wipe test and for leakage by an immersion test.

IDENTIFICATION

Each source is engraved with a serial number; types of sources are identified as shown in the tables.

COLOR CODING

The color coding applied to the slanting flats of cesium tubes will withstand autoclaving, common cleansing and sterilizing fluids and temperatures up to 300°C .

The following types are available:

Needles: trocar points, elongated countersunk eyelets; slanting flats at eyelet end distinguish ^{137}Cs needles from ^{226}Ra needles. (See Table 1)

The sources described in this bulletin are those most frequently in demand. Other designs and strengths can be made; inquiries for special requirements are invited.

Tubes, Cervix type: domed ends, elongated countersunk eyelets; slanting flats at eyelet end distinguish ^{137}Cs tubes from ^{226}Ra tubes. External length: 20mm, Active length: 13.5mm; Wall thickness: 0.5mm. (See Table 2)

Tubes, Mold type: flat ends, slanting flats at one end distinguish ^{137}Cs tubes from ^{226}Ra tubes. (See Table 3)

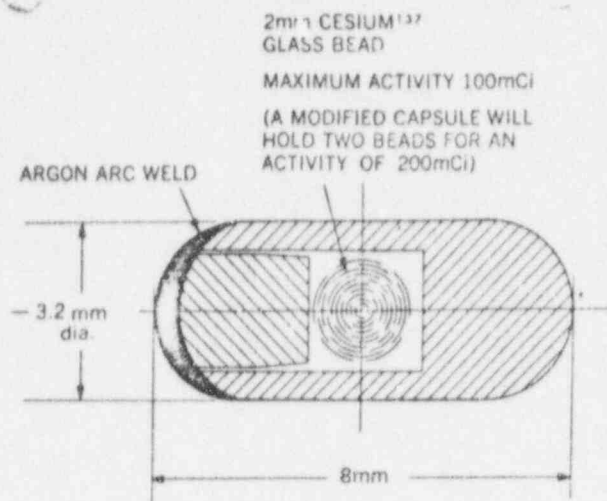
Pack: as recommended by I.A.E.A. Panel, comprising 10 tubes, type CDC-J2 and 12 needles, type CDC-S17. Order No.: CDC-P1.

AFTERLOADING SOURCES

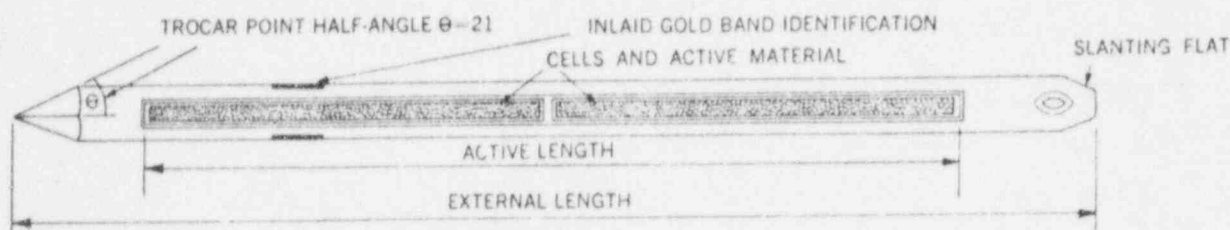
For use with remote afterloading machines^(3,4) we have designed sources made from small spherical cesium glass beads. Those shown in the table below are sealed in welded stainless steel capsules with hemispherical ends. Other designs are under development. (See Table 4)

REFERENCES

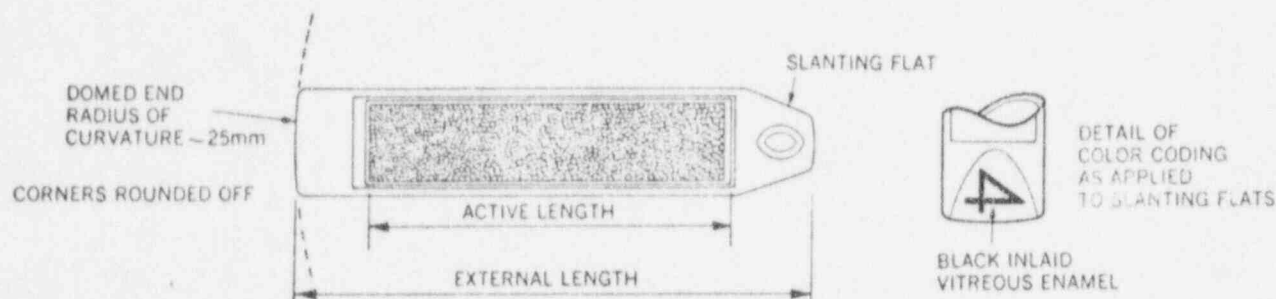
- INTERNATIONAL ATOMIC ENERGY AGENCY
Physical aspects of radioisotope brachytherapy: report of a panel on physical aspects of interstitial, intracavitary and surface therapy with sealed radioisotopes, Vienna, 20th-24th June 1966. Vienna, I.A.E.A., 1967, 63pp (Technical Reports Series No. 75).
- Use of small sealed sources in radiotherapy. Report of an IAEA panel. *Radiology*, vol. 88, pp. 154-156, 1967.
- WALSTAM, R.
Remotely-controlled afterloading radiotherapy apparatus. *Physics in Medicine and Biology*, vol. 7, pp. 225-228, 1962.
- WALSTAM, R.
Studies on therapeutic short-distance and intracavitary gamma beam techniques: physical considerations with special reference to radiation protection. *Acta Radiologica*, Supplementum 236, 1965, 129pp.
- HORSLER, A. C. F. JONES, J. C. and STACEY, A. J.
Cesium-137 sources for use in intracavitary and interstitial radiotherapy. *British Journal of Radiology*, vol. 37, pp. 385-390, 1964.
- MEREDITH, W. J., GREENE, D. and KAWASHIMA, K.
The attenuation and scattering in a phantom of gamma rays from some radionuclides used in mould and interstitial gamma-ray therapy. *British Journal of Radiology*, vol. 39, pp. 280-286, 1966.
- CARDIS, R., KJELLMAN, J.
A new apparatus for intracavitary radiotherapy. Cervitron-II. "Industries Atomiques", vol. 11, nos 11/12, pp. 63-66, 1967. Also available in an English translation.



Cesium-137 Afterloading Source



Cesium-137 needle (type CDC-A2)



Cesium-137 tube (type CDC-G4)

METHODS OF TESTING FOR LEAKAGE AND CONTAMINATION

A. Wipe test I

The source is wiped with a swab or tissue, moistened with ethanol or water; the activity removed is measured. Limit: 0.005 μ Ci.

G. Immersion test II

The source is immersed in water which is raised to 100°C and held at that temperature for 5 minutes. The water is then removed, the source

cooled, and the procedure repeated twice. Sources are passed if the activity extracted in the final procedure does not exceed 0.005 μ Ci.

L. Immersion test III

The source is immersed in water at 50°C for 4 hours and the activity in the water measured. Limit: 0.005 μ Ci.

Modified tests will be considered where necessary to meet statutory requirements.

TABLE 1—NEEDLES

Radium equivalent		Approximate ^{137}Cs content mCi	Length		North American Series Ext. dia.: 1.65mm Wall: 0.5mm Order No.
mg/cm	mg		External mm	Active mm	
0.33	0.5	1.5	25	15	CDC-S16
	1	3	42	30	CDC-S17
	1.5	4.5	58	45	CDC-S18
0.66	1	3	25	15	CDC-S4
	2	6	42	30	CDC-S5
	3	9	58	45	CDC-S40

TABLE 2—CERVIX TYPE TUBES

Radium equivalent mg	Approximate ^{137}Cs content mCi	British Series Ext. dia. 4.05mm Order No.	N. America Series Ext. Dia. 3.05mm Order No.	IAEA ^(1,2) Series Ext. Dia. 2.65mm Order No.	Identification on eyelet end
5	15	CDC-G1	CDC-H1	CDC-J1	I-Yellow
10	30	CDC-G2	CDC-H2	CDC-J2	II-Red
15	45	CDC-G3	CDC-H3	CDC-J3	3-White
20	60	CDC-G4	CDC-H4	CDC-J4	4-Black
25	75	CDC-G5	CDC-H5	CDC-J5	V-Blue
50	150	CDC-G6	CDC-H6		6-Green

TABLE 3—MOLD TYPE TUBES

Radium equivalent mg	Approximate ^{137}Cs content mCi	Order No.	Length		External diameter mm	Identification on each slanting flat
			External mm	Active mm		
1.5	4.5	CDC-F1	7.5	5	1.9	White spot
2.5	7.5	CDC-F2	12.5	10	1.9	Blue spot
3	9	CDC-F3	7.5	5	1.9	Green spot
5	15	CDC-F4	12.5	10	1.9	Yellow spot

TABLE 4—AFTERLOADING SOURCES

Equivalent activity	Length		External diameter mm	Wall thickness mm	Order No.
	external mm	active mm			
10mCi	8	2	3.2	0.45	CDC-K1
30mCi	8	2	3.2	0.45	CDC-K2
100mCi	8	2	3.2	0.45	CDC-K3
200mCi	8	4	3.2	0.45	CDC-K4
Sources of similar construction containing 0.1% of the above activities, for plotting dose distribution.					
10 μCi	8	2	3.2	0.45	CDC-L1
30 μCi	8	2	3.2	0.45	CDC-L2
100 μCi	8	2	3.2	0.45	CDC-L3
200 μCi	8	4	3.2	0.45	CDC-L4

APPENDIX IV

RADIATION DETECTION INSTRUMENTS

The following radiation detection instruments are available in the Radiation Therapy Service and are in addition to those listed in FGH Application for Renewal of License No. 05-0046-13 dated 25 June 1968.

1.

Instrument	No. Avail	Detection	Range mR/hr	Window mg/cm ²	Use
Victoreen 440	1	B, ✓	0-300	1	surveying
Victoreen Thyac III, with B, ✓ probe	1	B, ✓	0-200	30	surveying
scin/poppy	1	α	0-200	1	surveying

2. Victoreen Cond. R-Meter (1 available-dosimetry)

Probes	Range	Vol (cm ³)	Wall Thickness
651 (Low)	250R	0.20	-
130 (Med)	0.25R	177	220
70-5 (Med)	25R	1.83	67
131 (Med)	100R	.46	89
621 (High Co-60)	100R	0.46	450

3. Victoreen

Radocon II Model 555 (1 available-dosimetry)

Probes	Range (KeV)	Vol cm ³	Wall Thickness
555-100 MA	400-1300	0.0974	-
555-0.1 MA	35-400	97.4	-
555-100 MA	35-400	0.0974	-

4. Eberline Instrument Company Thermoluminescent System TLD-5 used with LiF₃(Th) ribbons for dosimeter measurements.

5. All instruments with the exception of item 4 above are calibrated by the U.S. Army Calibration Facility, Sacramento Army Depot, Sacramento, California, at 3 to 6 month intervals.

35871

6. Item 4 is calibrated and used as described in The Routine Use of Thermoluminescent Dosimetry for Radiation Therapy. Radiology Vol. 102, No. 3, Pages 685-689 March 1972.

August 1972

CURRICULUM VITAE

NAME

Donald G. Corby, M.D., Lt Colonel, MC

PRESENT POSITION

Chief, Clinical Research Service
Fitzsimons General Hospital
Denver, Colorado 80240

HOME ADDRESS

PLACE OF BIRTH

DATE OF BIRTH

PARENTS

WIFE

CHILDREN

EDUCATION

COLLEGE

Undergraduate College: 1951-1954
University of North Dakota
Grand Forks, North Dakota

MEDICAL SCHOOL

University of North Dakota
1954-1957
Degree: B.S. in Medicine

Northwestern University, 1957-1959
Chicago, Illinois
Degree: M.D., 1959

POSTGRADUATE

INTERNSHIP
(ROTATING)

Evanston Hospital Association, 1959-1960
Evanston, Illinois

Information in this record was deleted
in accordance with the Freedom of Information
Act, exemptions 6-395
FOIA

6/24

47042

TRAINING AND EXPERIENCE OF USERS OF RADIOISOTOPES

22 March 1974

WHITE, CHARLES E., LTC, MSC

Autovon
943-3201

1. FORMAL EDUCATION: Total Number of Years of Formal Schooling 7

Higher Educational Institutions Attended	Type of Program Pursued and Dates of Attendance	Degree, Diploma or Certificate Received and Date
a. <u>Clemson University</u>	<u>Chemistry</u>	<u>BS-1954</u>
b. <u>U.S. Naval Post Grad Sch</u>	<u>Physics</u>	<u>BS-1962</u>
c. <u>Johns Hopkins Univ</u>	<u>Radiological Physics</u>	<u>9 Sem Hrs 1966-67</u>
d. <u>Univ. of N.C.</u>	<u>Radiological Physics</u>	<u>MSPH 1969</u>

2. TRAINING IN THE USE OF RADIATION PRODUCING SOURCES AND DEVICES

I have received the following training in the subjects listed below:

Semester HOURS	Formal/On-the-Job Training	Subject Area	Identify where trained by Institution Letter from above and indicate any additional
18/120 of	<u>Formal/OJT</u>	in PRINCIPLES & PRACTICES OF RADIATION PROTECTION	<u>b,c,d</u>
24/150 of	<u>Formal/OJT</u>	in RADIOACTIVITY MEASUREMENT	<u>a,b,c,d</u>
3/0 of	<u>Formal</u>	in STANDARDIZATION	<u>b</u>
10/20 of	<u>Formal/OJT</u>	in MONITORING TECHNIQUES	<u>a,b,c,d</u>
24/10 of	<u>Formal/OJT</u>	in INSTRUMENTATION	<u>b,c,d</u>
30/0 of	<u>Formal</u>	in MATHEMATICS & CALCULATIONS BASIC TO THE USE & MEASUREMENT OF RADIOACTIVITY	<u>a,b,c,d</u>
6/0 of	<u>Formal</u>	in BIOLOGICAL EFFECTS OF RADIATION	<u>c,d</u>

(Use additional sheets or reverse of this form to describe any other training received in the use of radiation producing sources and devices.)

3. EXPERIENCE IN THE USE OF RADIATION PRODUCING SOURCES AND DEVICES. (Show Actual Use of Radioisotopes or Equivalent Experience.)

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
P-32	1 Ci 10 mCi	Clemson Univ, S.C. Fitzsimons Army Med Ctr	Sept 53-Jun 54 Aug 69-Present	Tracer studies Therapy
Co-60	8000 Ci 9000 Ci	Univ. of N.C. Fitzsimons Army Med Ctr	Aug 68-Jun 69 Sep 69-Present	Teletherapy Teletherapy
Radium 226	560 mCi	Fitzsimons Army Med Ctr	Sep 69-Present	Brachytherapy
Co-137	600 mCi	Fitzsimons Army Med Ctr	Jan 73-Present	Brachytherapy
S -90	50 mCi	Fitzsimons Army Med Ctr	Sep 69-Present	Therapy
I-131	10 mCi	Fitzsimons Army Med Ctr	Sep 69-Present	Therapy

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Act, exemptions
FOIA 96-395

CHARLES E. WHITE
LTC, MSC
Radiation Protection Officer

8/27

PROHIBIT
357
E/W
608
VZCZCTGNI87

PTTUZOVW RUEAUSA0256 0240126-UUUU--RHEGAAA.

ZNR UUUUU ZOV RUEAUSA REROUTE OF RUWIBGA0256 0232227

P 232200Z JAN 75

FM CDR FAMC DVR CO //HSF-X//

TO RUEADWD/DAWASHDC //DASG-HCH-E//

RUEAUSA/ATOMIC ENERGY COMMISSION MATERIALS BRANCH ATTN CLN
DIRECTORATE OF LICENSING WASHDC

BT

UNCLAS

HSF-X

SUBJ: REQUEST FOR EMERGENCY AMENDMENT TO AEC BYPRODUCT LICENSE
REQUEST EMERGENCY AMENDMENT TO AEC BYPRODUCT MATERIAL LICENSE
05-00046-13 TO PERMIT THE USE OF GOLD-198 IN THE FOLLOWING
PROCEDURE CLN

1. PATIENT'S NAME CLN [REDACTED]

1. PATIENT'S SSN CLN [REDACTED]

• DIAGNOSIS CLN CA OF PROSTATE.

• TREATMENT CLN PERMANENT INTERSTITIAL IMPLANT OF APPROXIMATELY
EIGHT GOLD-198 SEEDS OF APPROXIMATELY 8 MCI EACH IN A 5 CM.
DIAMETER SPHERICAL MASS WITHIN THE PROSTATE.

• ISOTOPE CLN GOLD-198; 64 MCI IN SEEDS AT 8 MCI EACH TO BE
PURCHASED FROM RADIUM CHEMICAL.

**COPIES SENT TO
REGULATORY OPERATIONS**

54320

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Act, exemptions
FOIA- 96-395

B/28

PAGE TWO RUWIBGA0256 UNCLAS

~~6. PHYSICIAN CLN TERRY D. POWELL, MAJOR, MC, CHIEF OF RADIATION~~
THERAPY, FAMC. BOARD CERTIFIED IN THERAPEUTIC RADIOLOGY;
APPROVED USER AT FAMC.

7. REFERENCE CLN TEXTBOOK - FLETCHER, TEXTBOOK OF RADIOTHERAPY;
- SECOND EDITION, PUBLISHER - LEA AND FEBIGER, PHILADELPHIA, PA
1973, PAGE 768.

8. CIVILIAN CONSULTANT.

BT

#0256

NNNN

54320

7. JOINING AND EXPERIENCE OF HUM USERS

USING PHYSICIAN'S NAME, RANK, SERVICE NUMBER, DUTY ASSIGNMENT, DUTY EXTENSION

Dr. David L. Richardson

Civilian

SSN [REDACTED]

Dept Radiation Therapy

Fitzsimons AMC Denver, CO 80240

341-8801 341-3045

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act, exemptions 6

FOIA 96-393

CLINICAL TRAINING AND EXPERIENCE OF ABOVE NAMED PHYSICIAN

(A) ISOTOPE	(B) CONDITIONS DIAGNOSED OR TREATED	(C) Maximum Activity Used	(D) No. Cases Observed (See Key 1 below)	(E) No. Cases Involving personal participation (Key 2)
I-131 or I-125	DIAGNOSIS OF THYROID FUNCTION	15 μ Ci	24	20
	DILUTION STUDIES	0		
	EXCRETION STUDIES	0		
	BRAIN TUMOR LOCALIZATION	0		
	SCANNING STUDIES	0		
	TREATMENT OF HYPERTHYROIDISM	15 mCi	2	2
	TREATMENT OF CARDIAC CONDITIONS			
	TREATMENT OF THYROID CARCINOMA	100 mCi	6	4
P-32 Soluble	TREATMENT OF POLYCYTHEMIA	0		
	TREATMENT OF LEUKEMIA	0		
	TREATMENT OF BONE METASTASES	20 mCi	2	2
	TUMOR LOCALIZATION	-		
	INTRACAVITARY TREATMENT	-		
	INTERSTITIAL TREATMENT	-		
Au-198	INTRACAVITARY TREATMENT	100 mCi	12	4
	INTERSTITIAL TREATMENT	-		
	SCANNING STUDIES	-		
Cr-51	BLOOD DETERMINATIONS	-		
	SCANNING STUDIES	-		
Co-58 or Co-60	DIAGNOSIS OF PERNICIOUS ANEMIA	-		
Co-60 Ir-192	INTERSTITIAL TREATMENT	-		
	INTRACAVITARY TREATMENT	-		
Co-60 or Cs-137	TELETHERAPY TREATMENT	6000 Ci	2000	2000
Sr-90 Sr-85	TREATMENT OF SUPERFICIAL DISEASES OF THE EYE	5 Ci	2	8
	BONE SCAN	-		
Other Isotopes Use back of page				

Key to Columns (D) and (E) above

1. Observation should consist of observing radiolotope administration techniques and discussion with preceptor the case histories to establish most appropriate diagnostic and/or therapeutic procedure, limitation, contraindications, etc.
2. Personal participation should consist of (a) supervised examination of patients to determine the suitability for radiolotope diagnosis and/or treatment and recommendation on dosage to be prescribed; (b) collaboration in calibration of the dose and the actual administration of the dose to the patient, including calculation of the radiation dose, related measurements, and plotting of data; and (c) adequate period of training to enable the physician to manage radioactive patients and to follow patients through diagnosis and/or the course of treatment.

DATES AND TOTAL NUMBER OF HOURS OF CLINICAL RADIOISOTOPE TRAINING	DATE	HOURS
	April, May 1972 1 July 1971 to 30 June 1974	320

The training and experience indicated above was obtained under the supervision of C.R. Bogardus, Jr., M.D.

at Univ. of Oklahoma Health Sciences
(Name and Address of Institution)

28 June 1977
(Date of Signature)

D.L. Richardson
(Signature of Applicant)