REPORT BY THE

Comptroller General

OF THE UNITED STATES

Federal Hospitals Could Improve Certain Cancer Treatment Capability By Sharing

The Chairman, House Committee on Appropriations asked GAO to review how the Department of Defense, the Veterans Administration, and the Public Health Service provide cancer care. The three agencies provide such treatment at nearly 300 Federal hospitals.

About 60 percent of cancer patients receive radiation therapy treatment. There are 45 radiation therapy facilities in Federal hospitals; although 36 facilities were underused in 1977, plans exist to modernize or establish new capabilities costing about $16 million.

There are 23 geographic locations in the United States where radiation therapy treatment could probably be provided more efficiently through interagency sharing.

HRD-79-42
FEBRUARY 7, 1979

COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

B-133044

The Honorable Jamie L. Whitten
Chairman, Committee on Appropriations
House of Representatives

Dear Mr. Chairman:

This report is in response to the former chairman's June 27, 1978, request that we review the Department of Defense's cancer treatment programs. Generally, we found that Defense provided cancer care on a decentralized basis in much the same manner as medical care for other diseases and illnesses. The same basic approach to providing cancer care was also being taken by the Veterans Administration and the Public Health Service. We found nothing inappropriate with this approach. There were, however, opportunities for improving how radiation therapy is provided to beneficiaries and for reducing Federal health care costs through interagency sharing.

In responding to the Committee's request, we coordinated our inquiries into this matter with officials of the Federal Health Resources Sharing Committee. Shortly after our audit work was completed in December 1978, the Sharing Committee established the Cancer Treatment Facility Subcommittee to address improving cancer treatment capability through interagency sharing. We believe that the issues raised in this report will be of particular interest to that group.

As requested by the Committee, we did not obtain written comments from Defense or the other Federal agencies affected by this report. However, the contents were discussed with agency medical officials, and their views have been incorporated into the report.

As arranged with the Committee, we are sending copies of this report to the Secretaries of Defense and Health, Education, and Welfare and the Administrator of Veterans Affairs. Copies will also be provided to the Chairman, Federal Health Resources Sharing Committee and to other interested parties upon request.

We appreciate the Committee's continued interest in the area of sharing medical facilities. It is my hope that we in the Federal sector can demonstrate to those in the private sector that overall costs in the health care area can be reduced without any corresponding decrease in the level or quality of service provided through the sharing of medical resources.

Sincerely yours,

Comptroller General
of the United States

COMPTROLLER GENERAL'S
REPORT TO THE HOUSE COMMITTEE
ON APPROPRIATIONS

FEDERAL HOSPITALS COULD IMPROVE CERTAIN CANCER TREATMENT CAPABILITY BY SHARING

D I G E S T

In response to a request from the Chairman, House Committee on Appropriations, GAO reviewed the manner in which the Department of Defense and certain other Federal agencies provide cancer care to eligible beneficiaries.

Cancer treatment in the form of surgery, chemotherapy, and radiation therapy is provided throughout the medical care systems of Defense as well as the Veterans Administration (VA) and the Department of Health, Education, and Welfare's (HEW's) Public Health Service.

Radiation therapy is used in treating about 60 percent of cancer patients. In 1977 there were 45 radiation therapy facilities in the Federal sector. Thirty-six of them did not meet the existing utilization standards of about 6,000 treatments per unit a year established by Defense and HEW. Eight of the 36 facilities provided less than half the treatments set forth in the standards. VA had established a utilization standard of about 2,850 treatments a year for a radiation therapy unit. However, because it was considerably lower than that of Defense or HEW and far below the capability of a radiation therapy unit, GAO did not use VA's standard for evaluating utilization. (See pp. 8 to 11.)

In the United States, 23 geographic locations have a high potential for sharing Federal radiation therapy facilities. Facilities in 20 of these locations were underused, and at each of the locations there were also other Federal hospitals in the same geographic area that did not have the capability to provide radiation therapy. (See pp. 11 to 16.)

Defense, VA, and the Public Health Service all plan to either establish new radiation

therapy capabilities or modernize existing capabilities at 34 locations by 1985, at an estimated total cost of about $16 million. (See p. 16.)

Because considerable opportunity exists to provide radiation therapy more efficiently through interagency sharing, GAO recommended that the heads of these agencies direct the Federal Health Resources Sharing Committee to evaluate the sharing potential at the 23 locations highlighted in this report before additional and renovated or upgraded radiation therapy capability is acquired by the Federal agencies. Medical officials from the affected agencies concurred with these recommendations.

GAO recommended that the Administrator of VA, with the assistance of the Sharing Committee, evaluate the reasonableness of VA's utilization standard of 2,850 treatments per year for radiation therapy equipment. VA medical officials concurred with this recommendation. Certain agency medical officials suggested that a single utilization criteria be established for all Federal radiation therapy facilities. GAO recomended that the Sharing Committee explore this possibility. (See p. 18.)

Neither VA nor the Public Health Service had any written policies specifically directed toward providing cancer care. Defense issued an instruction in 1967 containing policy guidance for providing cancer care in the military; however, little attention has apparently been given to it over the years and cancer care has evolved on a decentralized basis without the influence of the policy guidance.

Cancer care is available more extensively in the military hospital system than recently characterized to the Congress by Defense. (See pp. 21 to 27.) Defense supplied information to the Congress in 1978 which characterized the military's cancer treatment efforts as being essentially confined to 15 major military medical centers. While a considerable part of Defense's combined surgery,

chemotherapy, and radiation therapy capabilities are located at these 15 medical centers, these capabilities are also available at other medical facilities. Surgery, the most common cancer treatment method, was available at virtually every military hospital in the United States. (See p. 22.)

The information Defense supplied to the Congress also indicated that certain medical staff were required to provide cancer care and were available at the 15 medical centers Defense had identified to be cancer treatment facilities. Information from the Surgeons General of the Army, Navy, and Air Force showed that not all of the types of physician specialists identified by Defense were available at each of the 15 medical centers. In addition, certain other types of cancer specialists--considered important for providing good cancer care by the National Cancer Institute--were not identified by Defense and were not available at many of the 15 medical centers. However, a few of these types of specialists were available at other hospitals. (See pp. 23 to 25.)

GAO found a strong interdependence between cancer patient care and physician training programs. Therefore, GAO believes that cancer care should continue to be provided in the military health care system. (See pp. 25 and 26.)

GAO found nothing inappropriate with the overall process in Defense of providing cancer treatment at lower level military hospitals when the necessary capabilities are available and referring individuals that could not be treated to other military hospitals with greater capabilities or to the civilian sector. GAO also recommended that Defense determine the need for its policy guidance on cancer care. Defense medical officials agreed. GAO believed that if policy guidance is needed, it should consistently reflect appropriate and up-to-date health care standards. (See p. 29.)

Tear Sheet

GAO recommended that Defense make every effort to assign cancer specialists to those medical centers it considers to be cancer treatment facilities because that is where the more difficult cancer cases will probably be referred and, therefore, that is where these specialists are likely to be most needed. Defense medical officials agreed. (See p. 29.)

As requested by the Committee, GAO did not obtain written comments from the agencies affected by the report but did discuss its contents with agency medical officials.

Contents

ABBREVIATIONS

ACS	American College of Surgeons
CHAMPUS	Civilian Health and Medical Program of the Uniformed Services
CHAMPVA	Civilian Health and Medical Program of the Veterans Administration
DOD	Department of Defense
GAO	General Accounting Office
HEW	Department of Health, Education, and Welfare
NCI	National Cancer Institute
PHS	Public Health Service
VA	Veterans Administration

CHAPTER 1

INTRODUCTION

In response to a request from the Chairman, Committee on Appropriations, House of Representatives (see app. I), we have reviewed the manner in which the Department of Defense (DOD) and to a more limited extent the Veterans Administration (VA) and the Public Health Services (PHS) provide cancer care to beneficiaries.

Cancer is characterized by the unrestrained growth of cells. In most types of cancer, these cells build up into tumors that compress, invade, and destroy surrounding tissues. If the spread of these abnormal cells is not controlled or checked, it will usually cause death. According to information compiled by the National Center for Health Statistics, cancer ranks second only to heart disease in causing death in the United States; it accounts for nearly 20 percent of the total reported deaths. The specific cause of cancer is unknown.

Depending upon its location in the body and its biological character, cancer varies greatly in symptoms, growth, response to treatment, and possibility of cure. As such, it is not considered to be one disease but many, such as skin cancer, breast cancer, leukemia, lung cancer, and so on. Cancer is so common in the United States that if it continues to occur at its present rate, one in four persons now under the age of 20 will eventually develop it.

THE CANCER PATIENT

Cancer is predominantly a disease of middle and old age, and is much less common in children and young adults. In the United States, 66 percent of all cancers in men and 63 percent of cancers in women are diagnosed at age 55 or over.

There are over 3 million Americans alive today who have a history of cancer; 2 million of them were diagnosed 5 or more years ago. While some of these 2 million people still have evidence of cancer, most of them are considered cured. In 1978, about 700,000 individuals will be newly diagnosed as having cancer.

Survival of cancer patients depends on many factors. Two of the most important are the site or location of the disease and the degree to which it has spread when treatment is started. Patients with cancer which is diagnosed when it is localized or restricted to a limited area usually have the best chance of cure. The American Cancer Society estimates that one of every four persons who die of cancer might have been saved with earlier diagnosis and prompt treatment.

THE DOD CANCER PATIENT

Older individuals receive most of the cancer care provided in the military health care system. Our analysis of data available at nine military hospitals 1/ showed that about 75 percent of the cancer cases were retirees and dependents of retired and deceased members:

Beneficiary category	Percent
Active duty	11
Dependents of active duty	14
Retirees	40
Dependents of retired and deceased	34
Others	1
Total	100

A detailed age analysis of the 219 cancer patients at the Long Beach Naval Hospital for calendar year 1977 showed that 88 percent were retirees (average age 62) and dependents of retired and deceased members (average age 55). Almost all of the dependents were the spouses of retirees.

CANCER TREATMENT

The preferred approach to cancer treatment requires an integrated effort by many different specialists, each

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1/This data was not readily available at the other three locations we visited.

with his own expertise. It is generally recognized that the initial treatment decision is the most critical component in the care of cancer patients. This decision usually involves the selection of one or more of the following types of treatment--surgery, radiation therapy, and chemotherapy (use of drugs)--to combat the cancer. The trend in cancer treatment today is to use these forms of treatment in combination with one another.

Surgery

There are three types of cancer surgery: preventive, specific, and supportive.

Preventive surgery is performed to guard against the development of cancer. For example, certain polyps and moles of the colon, rectum, skin, or larynx may be precancerous conditions; that is, although they are not malignant, they may become cancerous if not removed.

Specific surgery is undertaken with the objective of removing all of the cancerous tissues and curing the patient. This surgery is used to treat patients with most of the major forms of cancer, especially if the disease has been diagnosed early. While the treatment of cancer has progressively involved the increased use of radiation therapy and chemotherapy, surgery is the most common means of treating cancer.

Supportive surgery is performed to sustain a cancer patient or to alleviate the pain or discomfort resulting directly or indirectly from the disease. For example, this surgery is sometimes necessary to treat complications, such as abscesses resulting from the tumor or infection, intestinal perforation and bleeding, or intestinal obstructions.

Radiation therapy

Radiation therapy is the primary method of treatment for some types of cancer and is used in conjunction with surgery and chemotherapy for many others. Radiation is used to cure cancer or to provide palliation (relief, but not cure) for about 60 percent of all cancer patients. Destroying the cancer without seriously damaging the surrounding normal cells or organs has always been one of the principal challenges of radiation therapy. Because of their type or location, some cancers cannot be destroyed by radiation without seriously damaging normal surrounding tissue or nearby vital organs. However, better equipment and treatment techniques are improving this situation.

The most common source of radiation in use at the present time is cobalt-60. This became a favored source of radiation because it provided large doses of gamma radiation which penetrate to a greater depth with less harmful side effects than low energy X-rays. In addition, cobalt-60 is one of the least expensive radiation sources available.

X-rays are the form of radiation that has been used longest in cancer treatment. In recent years, linear accelerators have been used to produce high intensity X-ray radiation which can be precisely focused on the cancer and penetrate deep with a tolerable effect on intervening tissues. In addition, linear accelerators can also produce electron beams (another form of radiation) which are more suitable than X-rays for certain types of cancer. Linear accelerators are now the preferred equipment for providing radiation therapy treatment.

It currently costs about $1 million to establish a megavoltage 1/ radiation therapy unit and about $130,000 per year to operate it.

In some cases, radiation sources may be placed directly on or in the body. As solids, they may be placed on the skin, inserted in body cavities, or implanted in tissues. Devices such as needles, plaques, seeds, wires, wax molds, and capsules have been created to place the radiation source as close to the cancer as possible.

Chemotherapy

Chemotherapy is the use of drugs to selectively seek out cancer cells and destroy them or interfere with their ability to reproduce.

Localized cancer often can be removed by surgery or destroyed by radiation. But these methods are ineffective against cancers that have spread or cancers of the blood or blood-forming tissues such as leukemia. Chemotherapy has been claimed to cure about 15 percent of the nonlocalized cases. For the other cases, drugs may temporarily inhibit the growth of cancer, relieve pain, and allow the cancer patient to live a longer, more comfortable life.

1/Equipment with energy levels over 1,000 kilovolts--usually cobalt-60 units and linear accelerators.

Chemotherapy is used as a treatment method in conjunction with surgery and radiation therapy and this combination of treatment methods is said to be bringing about normal life expectancy in a number of cancers formerly associated with short life spans.

AVAILABILITY OF CANCER TREATMENT CAPABILITY

National Cancer Institute (NCI) statistics show that about 88 percent of the people in the United States live within a 200-mile radius of the Nation's 20 comprehensive cancer centers and 29 additional clinical cancer centers recognized by NCI. Sixty-two percent of the American population lives within a 100-mile radius of the same facilities. Also, according to information published by the American College of Surgeons (ACS) in April 1978, there are 745 civilian and Federal hospitals which have approved cancer programs. 1/ In addition, from our discussions with medical officials, we understand that surgical treatment can be appropriately provided by qualified surgeons even though they may not be located at or associated with a cancer treatment facility. Therefore, surgery--the most widely used treatment--can be available at almost all hospitals.

With respect to radiation therapy, a 1976 study funded by NCI showed that 1,010 medical facilities in the United States had radiation therapy equipment and 2,171 physicians provided radiation therapy at these facilities.

With respect to the Federal sector alone, DOD provides surgical treatment in 131 hospitals in the United States. 2/ Megavoltage radiation therapy is available at 19 of these facilities. In fiscal year 1977, cancer patients were treated at 160 VA hospitals; 24 had megavoltage radiation therapy equipment. In 1977, cancer patients were treated at all eight PHS hospitals; two of these had megavoltage radiation therapy equipment.

1/Approval by ACS means that hospital has a multidisciplinary cancer committee and maintains a cancer registry in the manner prescribed by ACS. The registry is used to follow up on the health status of cancer patients and to serve as a source of information and statistics.

2/No overall statistics were available showing the number of cancer patients treated in DOD and the hospitals providing that treatment.

PATIENT FOLLOWUP

Lifetime followup is an integral part of cancer patient care, and the practice is encouraged by ACS through its program for approving cancer registries. Following initial treatment, cancer patients may require rehabilitation or suffer a recurrence of the disease years later. Therefore it is important that an organized system for long-term followup be part of a hospital's cancer program.

Cancer registries are used to maintain the information needed for patient followup. Individuals are contacted by letter, usually annually, to obtain information about their health or make arrangements for checkups.

ELIGIBILITY FOR MEDICAL CARE IN FEDERAL FACILITIES

DOD health care beneficiaries include active duty military members and, when space, facilities, and staff are available, their dependents, retirees, and dependents of retired and deceased military members. DOD's health care delivery system is composed of three separate systems administered by the Surgeons General of the Army, Navy, and Air Force.

VA health care beneficiaries include veterans with service-connected disabilities, those with nonservice-connected disabilities who meet other eligibility criteria, and dependents and survivors of certain veterans. Some military retirees also meet VA eligibility criteria and therefore are able to obtain care in both systems.

The PHS hospital system cares for several categories of beneficiaries, including American seamen and active duty members of the Coast Guard and PHS.

In addition, several laws permit beneficiaries from one Federal agency's health care system to be treated in another agency's facility under certain conditions. This issue was the subject of a recent report by our office to the Congress: "Legislation Needed to Encourage Better Use of Federal Medical Resources and Remove Obstacles to Interagency Sharing" (HRD-78-54, June 14, 1978).

Both DOD and VA operate programs which enable certain beneficiaries to obtain medical care from civilian sources. The Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) provides medical care from civilian sources for dependents of active duty members, retirees and their dependents, and the dependents of deceased

members. The Civilian Health and Medical Program of the Veterans Administration (CHAMPVA) provides care for the spouses and children of veterans who died or were totally disabled as a result of a service-connected disability. The annual cost of CHAMPUS is currently about $550 million, and about $30 million for VA's CHAMPVA program. Before obtaining inpatient care from civilian sources under CHAMPUS, eligible military beneficiaries who live within 40 miles of a uniformed services hospital must obtain a nonavailability statement from an official at that hospital, certifying that it is not practical, or the hospital is unable, to furnish the required care. Uniformed services hospitals include those in the PHS system as well as the DOD system.

The Government pays most of the cost of medical care provided under CHAMPUS. However, because cancer usually affects older beneficiances--some of whom may have limited financial resources--and CHAMPUS pays 75 percent of their medical care costs in civilian hospitals, some of the uniformed services' cancer patients could incur substantial costs. All retirees and dependents of retired and deceased peronnel who are eligible for Medicare lose their CHAMPUS benefits upon reaching age 65. However, these beneficiaries are still eligible for care in military facilities, and some are also eligible for VA care.

THE FEDERAL HEALTH RESOURCES SHARING COMMITTEE

In February 1977, the Federal Health Resources Sharing Committee was established to identify and promote opportunities for joint planning and shared use of health care resources in the Government. This committee is made up of health care officials from DOD, VA, and the Department of Health, Education, and Welfare's (HEW's) Public Health Service. The committee has adopted the philosophy that one approach to providing the highest possible quality of health care with the greatest efficiency lies in sharing Federal medical care resources.

The committee has established subcommittees to address specific sharing opportunities in the areas of cardiac catheterization and computerized tomography scanning. A cancer treatment facility subcommittee was formed in January 1979. The cancer treatment subcommittee is to develop and propose guidelines and criteria for assessing and justifying the need for and the appropriate location of cancer treatment facilities in the Federal health care system, to develop and propose utilization criteria, and to propose geographic areas where opportunities exist to share cancer treatment facilities.

CHAPTER 2

OPPORTUNITIES FOR SHARING RADIATION THERAPY

CAPABILITY IN THE FEDERAL SECTOR

There are 45 medical facilities which provide megavoltage radiation therapy treatments in DOD, VA, and PHS. Thirty-six of these facilities did not meet DOD's and HEW's existing utilization standards of about 6,000 treatments per unit per year in 1977. Eight of the 36 provided less than half of the treatments set forth in the standards. There are 23 geographic locations in the United States where a Federal agency has at least one radiation therapy facility and where there are also one or more other Federal hospitals without radiation therapy capability. Twenty of the 23 locations had underused radiation therapy facilities.

Radiation therapy facilities are shared now in some of these locations:

--Boston VA hospital shares with the Boston PHS hospital.

--Portsmouth Naval Regional Medical Center shares with the Norfolk PHS hospital.

--Letterman Army Medical Center shares with the San Francisco PHS hospital.

--Wright-Patterson Air Force Medical Center shares with the Dayton VA hospital.

--St. Louis VA hospital shares with Scott Air Force Medical Center.

Additional sharing of radiation therapy facilities in these and the other geographic areas, where possible, would build upon the established practice at the hospital level. It would also expand the use of the sharing concept which DOD, VA, and PHS have begun to use for such specialized

medical services as cardiac catheterization and computerized tomography scanning. 1/

USE OF RADIATION THERAPY UNITS

DOD instruction 6310.8 was issued on July 5, 1967, and contains policy guidance for providing cancer care in DOD. Included in the instruction are standards for the justification and economic utilization of radiation therapy equipment. The justification for a new unit should be based on an expected workload of at least 20 treatments a day or about 5,000 treatments a year. For economic utilization, a unit should provide 25 patient treatments per day or 6,350 treatments per year.

On March 28, 1978, pursuant to section 1501 of the Public Health Service Act, HEW issued national guidelines regarding the appropriate supply, distribution, and organization of health resources; this included megavoltage radiation therapy units. According to these guidelines a megavoltage radiation therapy unit should serve a population of at least 150,000 persons and treat at least 300 cancer cases annually. During the development of the guidelines a committee appointed by the American College of Radiology and the American Society

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1/In response to requests from the Chairman, House Appropriations Committee, we have issued the following reports to the Congress which dealt with the subject of interagency sharing of Federal medical resources.

"Sharing Cardiac Catheterization Services: A Way to Improve Patient Care and Reduce Costs" (HRD-78-14, Nov. 17, 1977).

"Computed Tomography Scanners: Opportunity for Coordinated Federal Planning Before Substantial Acquisitions" (HRD-78-41, Jan. 30, 1978).

"Legislation Needed to Encourage Better Use of Federal Medical Resources and Remove Obstacles to Interagency Sharing" (HRD-78-54, June 14, 1978).

The latter report deals with existing legislative authorities under which agencies can share medical resources and services, and points out several obstacles which currently inhibit agencies from taking full advantage of sharing opportunities.

of Therapeutic Radiology suggested that the economic utilization level of a radiation therapy unit would be 5,000 to 8,700 treatments per year. Based on comments received from the profession and general public, HEW established a standard of 6,000 per year (about 25 patient treatments per day).

A VA circular dated May 2, 1977, sets forth specific standards for the use of several of its specialized medical services. The standard for a megavoltage radiation therapy unit is 525 treatments per month (about 6,300 per year). Although this appears to be the same as the DOD and HEW standards, VA's Director of Radiology Services stated that the 525 treatments actually means 525 fields. 1/ HEW guidelines state that an average treatment equals 2.2 fields. Therefore VA's standard is only 2,865 treatments annually using HEW's definition of a treatment.

It should be recognized that a megavoltage radiation unit has far greater annual capacity than the 6,000 treatments. During 1977, two Federal units exceeded 9,600 treatments.

Utilization of the 45 Federal megavoltage radiation therapy facilities during 1977 varied substantially. The workloads ranged from 1,339 to 11,769 patient treatments:

1/When an individual is given a treatment, the radiation may be directed at the cancer from a number of different angles or entry points on the body. These are commonly referred to as fields.

Number of patient treatments	Number of megavoltage radiation therapy facilities
0	a/1
1,000 - 1,999	4
2,000 - 2,999	3
3,000 - 3,999	11
4,000 - 4,999	9
5,000 - 5,999	3
6,000 - 6,999	4
7,000 - 7,999	b/3
8,000 - 8,999	b/1
9,000 - 9,999	b/2
10,000 or more	c/4
Total	45

a/One DOD megavoltage radiation therapy facility located at Eisenhower Army Medical Center has not operated since it was established in 1975.

b/One facility in this range had two megavoltage radiation therapy units.

c/Three of these facilities had two megavoltage radiation therapy units.

Using the recently established HEW standard of 6,000 treatments per year for the economic utilization of a megavoltage radiation therapy unit, 36 of the 45 facilities in the Federal sector were underused in 1977--16 DOD, 18 VA, 1/ and the 2 PHS. We were not able to separately identify the workloads attributable to each radiation therapy unit at facilities with two units; therefore, those facilities were considered to have an unused capability if their combined workloads were below 12,000 treatments per year.

OPPORTUNITIES FOR SHARING RADIATION THERAPY FACILITIES

The utilization of Federal radiation therapy facilities could be improved through interagency sharing. There are five locations in the United States where two Federal agencies have radiation therapy facilities, and 18 locations

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1/If VA's standard of 2,865 treatments were used, only one of the VA facilities would be underused.

where one Federal agency has at least one radiation therapy facility. Twenty of the 23 locations had underused radiation therapy facilities in 1977, and each of the 23 locations had other Federal hospitals in the same general geographic area which do not have radiation therapy capability. Therefore there is high potential for sharing radiation therapy capability. A map showing these 23 locations is on page 13. Appendix II contains a listing of all Federal hospitals and the megavoltage therapy workloads for 1977 in these 23 geographic locations.

The potential for sharing where two Federal agencies have capability

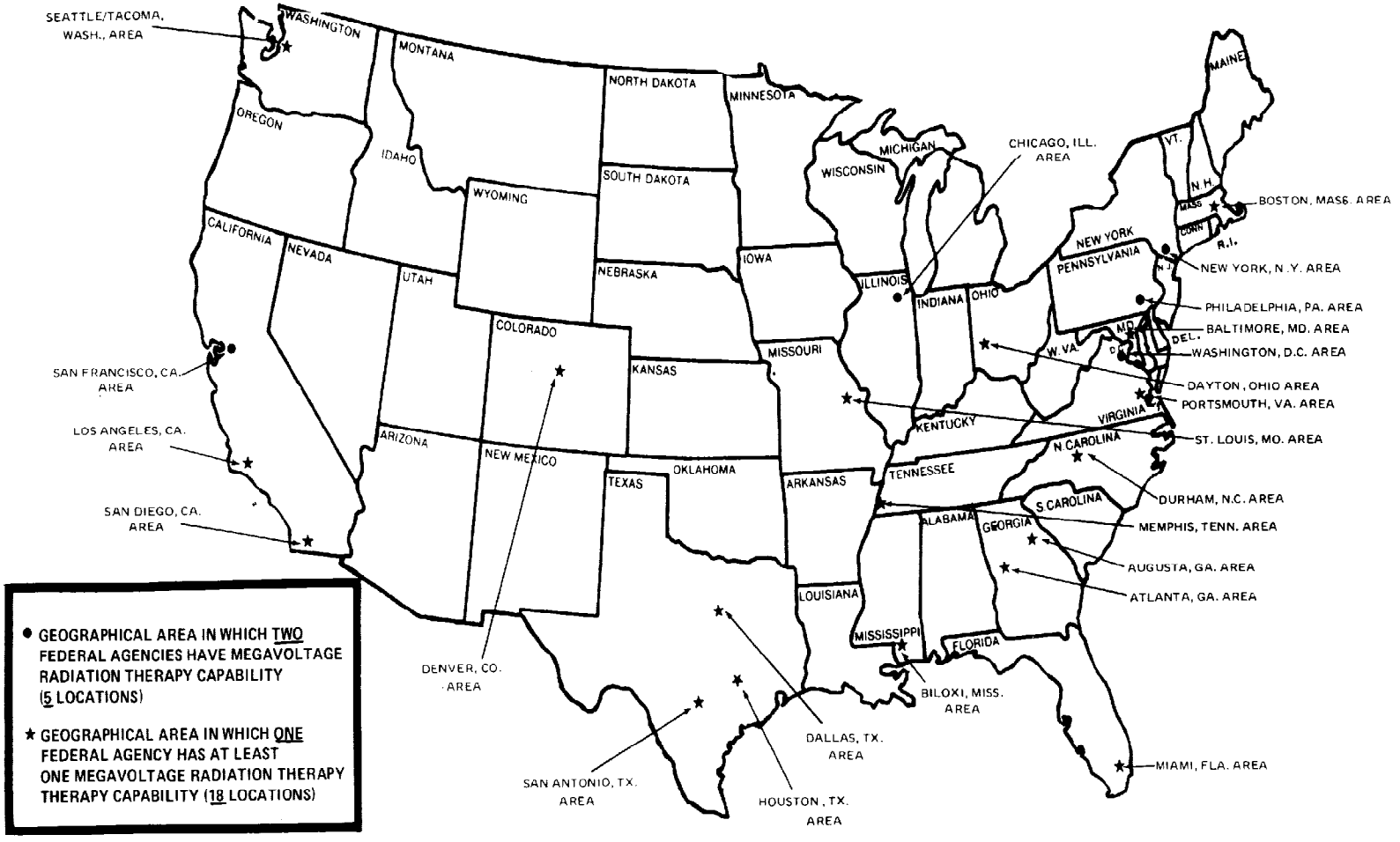
There are five geographic areas in the United States where two Federal agencies have radiation therapy facilities--San Francisco; Washington, D.C.; New York City; Chicago; and Philadelphia. Two of the areas, San Francisco and Washington, D.C., have four Federal megavoltage radiation therapy facilities.

The Army, Navy, Air Force, and VA have radiation therapy facilities in the San Francisco area. During 1977, the Army facility provided 6,086 patient treatments and was the only facility in that area which exceeded the economic utilization standard of 6,000 treatments per year. Each of the other three facilities provided between 3,000 and 4,000 patient treatments. If these four facilities were being used at or above the standard, their combined workloads would be at least 24,000 patient treatments per year; in 1977, they provided 16,185 patient treatments--about 67 percent of that workload level. Consideration is being given to replacing or upgrading three units at a cost of about $1.1 million.

The Army, Navy, Air Force, and VA also have radiation therapy facilities in Washington, D.C.; only the Navy facility exceeded 6,000 patient treatments per unit during 1977. The Army had two megavoltage radiation therapy units in its facility--a linear accelerator and a cobalt-60 unit. They provided about 9,600 treatments--2,400 treatments below the standard for two units. The VA and Air Force facilities provided about 3,500 and 1,700 patient treatments, respectively. If these five megavoltage radiation therapy units were being used at or above the economic utilization standard, their combined workloads would be at least 30,000 patient treatments per year; in 1977, they provided 21,765 treatments--about 72 percent of that workload level. The Navy facility, which now has one unit, plans to purchase a new linear accelerator and a new cobalt-60 unit.

TWENTY THREE GEOGRAPHICAL AREAS IN THE UNITED STATES IN WHICH FEDERAL MEGAVOLTAGE RADIATION THERAPY SERVICES MIGHT BE SHARED WITH OTHER FEDERAL HOSPITALS

(SEE APPENDIX II FOR MORE DETAILED INFORMATION)



VA also has a megavoltage radiation therapy unit at its Brooklyn hospital and two additional units at its Bronx hospital. PHS has a unit at its Staten Island hospital. The Brooklyn VA, Bronx VA, and Staten Island PHS facilities provided 4,858, 8,700, and 2,688 patient treatments, respectively, in 1977. If these four units were being used at or above the economic utilization standard, their combined workloads would be at least 24,000 patient treatments; in 1977 they provided 16,240--68 percent of that workload level. The PHS hospital is considering the purchase of a new linear accelerator.

The potential for sharing where one Federal agency has capability

There are 18 geographic locations where one Federal agency has at least one megavoltage radiation therapy facility and one or both of the other Federal agencies have hospitals but no radiation therapy capability.

At nine locations, VA has megavoltage radiation therapy facilities and DOD and/or PHS have hospitals without such capability. Facilities in six of these nine locations were underused in 1977--using the economic utilization criteria of 6,000 patient treatments per year. There were approximately 529,000 DOD beneficiaries in these six locations in 1977, of which about 239,000 were retirees and their dependents. Information was not readily available concerning how radiation therapy was provided at the DOD hospitals; however, two of the DOD installations (Ft. Bragg and Scott Air Force Base) referred at least 39 patients to other DOD hospitals for radiation therapy treatment.

There are eight other locations 1/ where DOD has radiation therapy facilities and VA and/or PHS have hospitals with no radiation therapy capability. Facilities in all of the eight locations were underused in 1977. Again, information was not readily available on how VA provided megavoltage radiation therapy at all locations. However, in the San Antonio location, VA purchased megavoltage radiation therapy services for 491 patients at a cost of $186,000 during the 12-month period from September 1977 to August 1978. During calendar year 1977, Brooke Army Medical Center (also located

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1/PHS has the radiation therapy capability at the one other location.

at San Antonio) provided only 2,913 patient treatments, substantially lower than the 6,000 patient treatment economic utilization standard. Also, in the Denver, Seattle, and Augusta locations, VA contracted for radiation therapy services for 699 patients. The cost of these services was not readily available.

AGENCIES PLAN TO ACQUIRE NEW MEGAVOLTAGE RADIATION THERAPY CAPABILITY

VA, DOD, and PHS plans call for establishing 5 new radiation therapy facilities and renovating/upgrading 29 others by 1985. The estimated cost of this effort is about $16 million. VA plans to establish five new megavoltage radiation therapy facilities by 1984. These facilities will be located in Albany, San Diego, Tampa, Little Rock, and Portland. In addition, VA has determined that 17 of its existing 24 facilities need upgrading and modernizing. VA estimates the cost of the five new facilities and its upgrading and modernizing program to be $10.4 million.

The Army, Navy, and Air Force do not plan to establish any new megavoltage radiation therapy capability by 1985. However, the Army and Navy plan to upgrade eight of their existing facilities by purchasing new linear accelerators or cobalt-60 units, and the Air Force is considering the purchase of three new linear accelerators. The estimated cost of all the DOD equipment improvements is $4.5 million. This cost does not include facility modification or installation costs.

PHS does not plan to establish any new megavoltage radiation therapy facilities in the next 5 years. However, there are plans to purchase a linear accelerator and a computerized radiation treatment planning system for the Staten Island facility. PHS estimates the equipment will cost $1.1 million, including the required facility renovation. Some of the projects for replacing megavoltage radiation therapy units will involve substituting linear accelerators for existing cobalt-60 units. Since linear accelerators have certain advantages over cobalt-60 units and are the preferred equipment for providing radiation therapy, interagency sharing at locations which will have linear accelerators could improve the treatment provided to beneficiaries.

CONCLUSIONS

There is considerable opportunity to provide radiation therapy more efficiently through greater interagency sharing. There are 45 radiation therapy facilities in the Federal sector (19 DOD, 24 VA, and 2 PHS) and 36 of them do not meet DOD's and HEW's economic utilization standards of about 6,000 treatments per unit a year. Eight of the 36 facilities provided less than 3,000 treatments a year.

There are five geographic locations in the United States where two Federal agencies have radiation therapy facilities. Several of these facilities are underused; we believe there is high potential for sharing, and there may be potential for eliminating or not replacing certain radiation therapy facilities.

There are 18 geographic locations where one Federal agency has at least one radiation therapy facility; other Federal hospitals in the same general geographic area are without radiation therapy capability. Many of these facilities are also underused. Although we were not able to obtain information on how all of the hospitals obtained radiation therapy treatment, it appeared to be through referral to another hospital in the agencies' system or by purchasing it from the civilian sector. We believe the Federal hospitals with radiation therapy capability may be able to absorb much of the referral or contract work through interagency sharing.

Commenting on a draft of our report, VA medical officials said that achieving the full potential for sharing radiation therapy facilities might not be possible because most cancer patients are older and often very sick individuals who could not be easily transported. In such situations, we believe arrangements might be made to admit an individual as an inpatient to the hospital which has the radiation therapy capability.

VA, DOD, and PHS plan to either establish new radiation therapy capability or upgrade the existing capability at 34 locations by 1985. The cost of this effort is estimated to be about $16 million. Because there appears to be an opportunity for achieving savings and possibly improving care by sharing radiation therapy facilities, we believe that the Federal Health Resources Sharing Committee should make a comprehensive evaluation of the sharing opportunities at each of the 23 locations where we have highlighted the potential (see p. 34). The committee's goal should be to increase workload levels more in line with the 6,000-treatments-per-year

standard by providing radiation therapy treatment on a shared basis, where possible. DOD, VA, and PHS should, to the extent possible, defer the acquisition of new radiation therapy equipment until the sharing potential has been fully evaluated

The Sharing Committee could also help evaluate VA's current utilization criteria to determine whether it should be brought into harmony with DOD and HEW standards.

Certain agency medical officials commented that a single utilization criteria for Federal radiation therapy facilities should be developed. We believe this would be appropriate and should be considered by the Sharing Committee.

RECOMMENDATIONS

We recommend that the Secretaries of Defense and HEW and the Administrator of Veterans Affairs

--direct the Federal Health Resources Sharing Committee to include in its planned work on cancer treatment facilities (1) a comprehensive evaluation of the sharing opportunities at the 23 geographic locations highlighted in this report, and (2) develop, if possible, a single radiation therapy utilization criteria for all Federal facilities;

--share the radiation therapy capability at the locations determined by the Sharing Committee to have potential;

--defer, to the extent possible, the acquisition of new or upgraded radiation therapy equipment until the sharing potential at the 23 geographic locations is fully evaluated; and

--withdraw acquisition plans for radiation therapy equipment at locations where good quality radiation therapy can be provided through sharing with existing equipment.

If a single radiation therapy utilitzation criteria for Federal facilities cannot be developed, we recommend that the Administrator of Veterans Affairs, with the assistance of the Federal Health Resources Sharing Committee, evaluate VA's existing criteria for the utilization of radiation therapy equipment to determine whether it should be brought into harmony with DOD and HEW standards.

COMMENTS OF AGENCY MEDICAL OFFICIALS

Medical officials of DOD, Army, Navy, Air Force, VA, and PHS concurred with the recommendations that the Sharing Committee evaluate the sharing opportunities at the 23 locations and that sharing be instituted at the locations determined to have potential.

Some agency medical officials expressed concern over the recommendation to defer the acquisition of new or upgraded radiation therapy equipment until the sharing potential at the 23 locations had been fully evaluated. Air Force medical officials noted that within DOD, a tri-service committee reviews equipment items costing over $100,000; and this review is coordinated with other Federal and civilian medical providers. Our previous work indicated that the coordination tends to be limited to other military hospitals near the one requesting equipment. VA medical officials said that until the sharing potential is evaluated any limitation on acquisition should be sufficiently flexible to permit the replacement of nonfunctioning equipment where there are ongoing radiation therapy caseloads. We concur with their observation, but believe that deferral of acquisition should be done to the extent possible.

Medical officials from several agencies commented on the economic utilization criteria. VA radiology officials believed that the criteria might better be expressed in terms of ports (or fields) treated rather than treatments. Army radiation therapy officials indicated that economic utilization criteria that combined several indicators of workload (such as ports treated and number of radiation therapy cases handled) might be an improvement. Air Force medical officials indicated that the staff available also affects the utilization of a radiation therapy unit. We believe the observations made by these officials have considerable merit and should be considered by the Sharing Committee as part of its efforts to develop a single utilization criteria for Federal radiation therapy facilities.

CHAPTER 3

HOW CANCER TREATMENT IS PROVIDED IN THE DOD SYSTEM

Cancer care in the Federal sector is provided on a decentralized basis with little or no direction or management control from DOD, VA, or PHS headquarters. As such, there are no specific cancer treatment programs, and cancer care is provided at the hospital level in essentially the same manner as care for other diseases or illnesses. DOD issued an instruction in 1967 to provide the framework for a specific cancer treatment program. However, as a practica matter little attention seems to have been given to the instruction over the years, and cancer care has evolved without the influence of this policy guidance.

Also, during the hearings on DOD's fiscal year 1979 budget request DOD indicated that cancer care was provided at 15 of its major medical centers. While this is accurate, it does not give a complete picture of how and where cancer treatment is provided in DOD.

CANCER CARE IN DOD

In July 1967 DOD issued instruction number 6310.8, which set forth the following policy concerning the treatment of cancer patients and the programming of additional cancer treatment capability

- --where feasible, a cancer patient should be treated in a single medical facility having a coordinated staff and a complete diagnostic and therapeutic capability,
- --proposals for establishment of new cancer treatment centers could be submitted when the number of new cancer cases amounted to at least 200 a year, and
- --the economic utilization objective of a unit of megavoltage radiation therapy equipment should be 25 treatments per day, or 6,350 per year.

The instruction also called upon the Secretary of each military service to

- --develop plans for the treatment and referral of cancer patients,

--develop common definitions, uniform diagnostic criteria, and comparable epidemiological data (information needed to identify the incidence, distribution, and control of a disease in a population) for planning and reporting purposes, and

--make maximum efficient use of all capabilities through interservice planning of professional services according to the workload, without limitation by service or geographical relationships.

The Assistant Secretary of Defense for Health Affairs was made responsible for overall coordination of the cancer treatment programs among the military departments.

Our initial contacts with medical officials at the headquarters level revealed a general unawareness of the instruction's existence or requirements. Hospital officials did not bring the instruction to our attention during our visits. None of the plans referred to in the instruction had been developed and the statistics needed to assess the nature and extent of DOD's cancer treatment efforts were not available at the headquarters level. Also, statistical information obtained from the hospital level was not always comparable. For example, efforts to identify the number of cancer patients and the number of treatment visits at each military hospital having a megavoltage therapy capability resulted in obtaining statistics which were not uniform; in some cases, the data was not available.

Based on the above, it appeared that little attention had been given to the instruction since it was issued, and cancer care in DOD has essentially evolved on a decentralized basis without the specific influence of this policy guidance.

During the March 1978 appropriation hearings on DOD's fiscal year 1979 budget request, DOD provided information which showed that cancer is treated at 15 major medical centers--7 Army, 4 Navy, and 4 Air Force--by a spectrum of medical specialists. Our review showed that, while this was correct, the DOD information provided an incomplete picture of the pervasive nature of cancer treatment in the DOD system.

DOD provides cancer care at many medical facilities other than the 15 major medical centers referred to as cancer treatment facilities. The treatment provided--surgery, chemotherapy, and radiation therapy--is available from active duty physicians and from civilian physicians under contract.

Surgery, the most common treatment method, is available at 131 military hospitals in the United States. When the needed surgical procedure can be provided at any of these medical facilities, the cancer patient is treated there. For example, surgical cancer treatment can be provided at the Barksdale Air Force Base hospital--a 75-bed facility in Louisiana. In 1977 surgical treatment was provided for 23 of the 35 new cancer cases diagnosed at the facility.

Chemotherapy is prescribed and administered at some medical centers which were not identified by DOD as cancer treatment facilities. For example, chemotherapy at the Dwight David Eisenhower Army Medical Center is prescribed by and may be administered by an assigned medical oncologist. Some chemotherapy may be prescribed and administered elsewhere because Eisenhower is not staffed or equipped to provide this treatment for certain patients.

At other smaller hospitals, chemotherapy is administered after it has been prescribed by a medical oncologist from another hospital. At Carswell Air Force Base hospital, for example, a staff internist administers chemotherapy after it is prescribed by a medical oncologist from a major military medical center or by a civilian physician. However, for those cancers which have well established chemotherapy treatment protocols, the internist can administer chemotherapy in accordance with those protocols with or without the assistance of a medical oncologist.

Radiation therapy is available at four medical centers and certain other military hospitals which were not identified by DOD as cancer treatment facilities. At the medical centers, radiation therapy units are a part of the facility. At other hospitals radiation therapy is purchased on contract from the civilian sector. In the latter case, the hospital pays for the radiation therapy provided by civilian sources while it retains management of the patient's overall care. This practice is used for both active duty and nonactive duty personnel. For example, at the Pensacola Naval Medical Center, a 139-bed hospital, the Navy paid $14,250 for radiation therapy treatments from civilian sources in fiscal year 1977.

Referrals to other DOD hospitals

Although all of the 131 DOD hospitals can provide some cancer care, patients requiring treatment which is beyond a particular hospital's capability are referred to other

military facilities which can provide the care or to the civilian sector. Within the military system, referrals are generally made to the medical centers because they are more capable of handling difficult and complex cases. According to records maintained by the DOD group which regulates the transfer of patients using air transportation, over 1,000 cancer patients were referred for chemotherapy and radiation therapy in calendar year 1977.

Medical center referred to (note a)	Purpose of referrals (note b)	
	Chemotherapy	Radiation therapy
Brooke	27	10
Fitzsimons	65	10
Letterman	9	-
Madigan	5	-
Walter Reed	167	51
Wm. Beaumont	11	-
Malcolm Grow	13	4
Wilford Hall	359	44
Kessler	59	9
Wright-Patterson	14	3
Bethesda	56	27
Oakland	2	1
Portsmouth	11	9
San Diego	9	4
All other facilities	76	8
Total	883	180

a/Includes 14 of the 15 medical centers DOD referred to during the March 1978 hearings.

b/Data for surgical referrals was not readily available.

Cancer treatment at medical centers

Medical centers are staffed by a variety of medical specialists and provide the widest range of cancer care available in DOD. Although there are physician shortages in some medical specialties; surgery, chemotherapy, and radiation therapy are generally available, alone or in combination, to treat cancer at medical centers.

During the 1979 budget hearings, DOD said that the 15 medical centers it identified as cancer treatment facilities were staffed with a minimum mix of specialists which included a medical oncologist who acted as a team leader working with a

--general surgeon,
--cardio-thoracic surgeon,
--neurosurgeon,
--urologist,
--plastic surgeon,
--otorhinolaryngologist,
--general internist,
--hemotologist-oncologist,
--nephrologist,
--pathologist,
--diagnostic radiologist,
--dermatologist, and
--physical medicine physician.

Officials at NCI stated that, in addition to the above, specialists in therapeutic radiology, pediatric oncology, surgical oncology, and medical oncology are important for operating a comprehensive cancer treatment facility.

According to information obtained from the Surgeons General of each service, specialist staffing is below the minimum mix set forth by DOD officials during the 1979 budget hearings. Nine of the 15 medical centers do not have specialists in thoracic surgery, neurosurgery, nephrology, or physical medicine.

Also, 11 of the 15 medical centers lacked one or more of those specialists considered important by NCI. The Surgeons General reported that 9 of these 11 medical centers had no surgical oncologists, 7 had no pediatric oncologists, and 1 was without a radiation therapist. Commenting on our draft report, DOD medical officials informed us that the services of these specialists are obtained through referrals to other military hospitals or from the civilian sector when they are needed.

The medical centers which had no pediatric oncologist (three Navy and four Air Force facilities) were staffed by at least one medical oncologist. The medical center which did not have a therapeutic radiologist met this need by contracting for the services with a civilian therapeutic radiologist. Although there were shortages in surgical oncology

at nine hospitals, each medical center was staffed with a minimum of two general surgeons and at least one other surgical specialist. Two surgical oncologists, one in the Army and one in the Air Force, were available. However, they were not assigned to any of the 15 medical centers designated by DOD as cancer treatment facilities. One surgical oncologist was assigned to Eisenhower Army Medical Center and had been told it was a major cancer treatment facility. The second surgical oncologist was assigned to Pease Air Force Base Hospital. According to Air Force assignment officials, this individual was assigned to fill the need for a general surgeon at the 55-bed facility and to comply with the surgeon's wishes.

In addition to providing cancer treatment, each of the 15 medical centers provides physician training through accredited residency programs. These residency programs benefit considerably from the exposure to cancer patient care. According to military and other physicians interviewed during our field work, removing cancer patients from the medical centers would adversely affect physician training programs.

All of the medical centers identified by DOD as cancer treatment facilities offered at least one residency program. Twelve centers provided medical education in seven or more specialties. The medical residencies were:

--anesthesiology
--child psychology
--dermatology
--diagnostic radiology
--family practice
--internal medicine
--neurological surgery
--neurology
--nuclear medicine
--obstetrics-gynecology
--ophthalmology
--orthopedic surgery
--otolaryngology
--pathology
--pediatric allergy
--pediatrics
--physical medicine
--plastic surgery
--psychiatry
--surgery
--thoracic surgery
--urology

Although most of these residency programs generally do not provide specific training in oncology, cancer patient care is an integral part of them. Residents in each specialty come into contact with cancer patients and learn how to deal with their medical needs. Physicians involved in education programs stated that:

--Cancer patients provide the most radical, complex, and interesting medical cases for anesthesiology residents. Their exposure to cancer patients is essential to a complete and effective anesthesiology residency program.

--Cancer patients are essential to the complete training of ophthalmology residents. They are particularly important because the diagnosis of ophthalmological cancer relies heavily on the doctor's ability to make a diagnosis from visual analysis, since biopsies are often not possible.

Military medical education officials stated that exposure to cancer patients is essential to most residency programs. They said, however, that this exposure need not include radiation therapy treatment unless, of course, the residency program was therapeutic radiology. Therefore, the capability to provide multi-modality care (i.e., surgery, chemotherapy, and radiation therapy) is essential only in that such a combined capability attracts referral cases and assures a diversified mix of cancer patients.

Cancer patient followup within DOD

Lifetime followup, an integral part of cancer patient care, is provided by most military medical facilities. Many DOD medical facilties maintain cancer registries for patient followup, although not all are approved by ACS. Eleven of the 12 DOD medical facilities we visited maintained registries, 7 were approved by ACS, and 3 others were seeking ACS approval. Recent Army and Air Force directives require that all medical facilities providing cancer care also provide followup for cancer patients.

DOD had provided for followup through a central registry known as the Armed Forces Central Medical Registry, which was used in conjunction with local hospital registries. Established in 1972, its purpose was to (1) register and provide

followup for patients with any medical problems requiring long-term surveillance and (2) permit the statistical analyses concerned with the clinical, therapeutic, and end results viewpoint of disease. Its use was discontinued in 1977 because of insufficient support from the services.

CANCER CARE IN VA AND PHS

Cancer care in VA and PHS is also provided on a decentralized basis. As such, there are no separately identified cancer treatment programs, and cancer care is provided with little or no direction or management control from agency headquarters.

VA has no written policies or procedures specifically concerning cancer treatment. Cancer care is provided under the VA regionalization concept, which allows patients to enter the system through any VA health care facility. Although the medical services needed are not always available at every hospital, they are usually available within the VA system or can be provided through referrals. About 81,000 cancer patients were treated and released at 160 VA hospitals in 1977. During the same year, approximately 15,000 cancer patients received about 214,000 radiation treatments at 24 hospitals. Of these 24 hospitals, 22 were affiliated with medical schools which provided additional resources for the hospital to draw upon in providing cancer care as well as other medical care.

VA began an effort to prepare an overall comprehensive cancer treatment plan in March 1978. Completion of this plan is expected by early 1980.

With the exception of a manual dealing with the development and operation of cancer registries, PHS has no overall written policy or procedures for providing cancer treatment. In 1977 about 1,250 cancer patients were treated in the eight PHS hospitals, and approximately 330 patients received about 4,000 radiation treatments at the two hospitals equipped with megavoltage therapy units.

CONCLUSIONS

Cancer treatment in the form of surgery, chemotherapy, and radiation therapy is provided on a decentralized basis throughout the medical care systems of DOD, VA, and PHS. Neither VA nor PHS had any written policies specifically directed toward providing cancer care. DOD had issued

an instruction in 1967 containing policy guidance for providing cancer care in the military; however, little attention had apparently been given to it over the years, and it appeared that cancer treatment in DOD had also evolved on a decentralized basis without much influence from this policy guidance.

Retirees and dependents of retired and deceased military personnel represent about 75 percent of DOD's cancer workload at the locations we visited. These individuals are not the primary beneficiaries in the military health care system, and some of the retirees would also be eligible for care in VA. Because cancer is primarily a disease of middle and old age and because the greater majority of the DOD cancer caseload is represented by beneficiaries in this age group, cancer treatment care appears to have only a limited relationship to meeting military mobilization requirements.

DOD has supplied information to the Congress which characterized the military's cancer treatment efforts as being essentially confined to 15 major medical centers. While a considerable portion of DOD's combined surgery, chemotherapy, and radiation therapy is located at these medical centers, the three treatment methods were also available at other medical facilities. Surgery--the most common method--was available at virtually every military hospital in the United States.

The information DOD supplied to the Congress also indicated that certain medical staff was required for cancer care and available at the 15 medical centers it had identified as cancer treatment facilities. Information we obtained from the Surgeons General of the Army, Navy, and Air Force showed that not all of the types of physicians identified by DOD were available at each of the 15 medical centers. In addition, certain other types of cancer specialists--considered important for providing cancer care by NCI--were not identified by DOD and were not available at many of the 15 cancer treatment facilities. However, a few of these types of specialists were assigned to other hospitals.

Even though cancer care has evolved on a decentralized basis without the influence of DOD's 1967 policy guidance and is more pervasive in the military hospital system than recently characterized by DOD, we found nothing inappropriate with the overall process for providing cancer treatment care

which involved providing treatment at the lower level hospitals when the necessary capabilities were available and referring individuals who could not be treated to military hospitals with greater capabilities or to the civilian sector.

With regard to staffing, however, we believe that every effort should be made to assign cancer specialists to those medical centers considered to be cancer treatment facilities because they are the locations in the military where the more difficult cancer cases will probably be referred, and therefore the locations where the services of these specialists will be most needed.

We believe that cancer care should continue to be provided in the military health care system. Because surgery is the primary treatment method and because of the strong interdependence between cancer patient care and physician training programs, the removal of cancer patient care from the DOD medical care system would probably do more harm than good.

RECOMMENDATIONS

We recommend that the Secretary of Defense:

--Determine the need for DOD policy guidance on cancer care and, if needed, take steps to assure that both the policy and cancer treatment provided consistently reflects appropriate and up-to-date health care standards.

--Assure that the Army, Navy and Air Force make every effort to assign cancer treatment specialists to those medical centers considered to be cancer treatment facilities.

COMMENTS OF AGENCY MEDICAL OFFICIALS

Medical officials from DOD and the three military services concurred with the above recommendations.

CHAPTER 4

SCOPE OF REVIEW

Our review was made to examine how DOD provided medical care to cancer patients and to assess whether this medical service should be provided in the DOD health care system or by other health care providers. Carrying out this objective required reviewing the policies and practices of DOD and, to a lesser extent, VA and PHS in providing cancer treatment.

Because of the pervasive nature of cancer treatment in the DOD hospital system, we actually visited only a small number of the hospitals where cancer care is provided. However, the hospitals visited included medical centers as well as smaller hospitals with differing cancer treatment capabilities. In that context, they represented a cross section of the settings in which cancer treatment care is provided in the military.

We made our review at the following locations:

Headquarters:

--Office of the Assistant Secretary of Defense for Health Affairs.

--Offices of the Army, Navy, and Air Force Surgeons General.

--VA.

--PHS.

--NCI.

Federal Hospitals:

--Walter Reed Army Medical Center.

--Brooke Army Medical Center.

--Eisenhower Army Medical Center.

--Bethesda National Naval Medical Center.

--Pensacola Naval Medical Center.

--Long Beach Naval Regional Medical Center.

--Orlando Naval Regional Medical Center.

--Wilford Hall Air Force Medical Center.

--Wright-Patterson Air Force Medical Center.

--Malcolm Grow Air Force Medical Center.

--Carswell Air Force Regional Hospital.

--Barksdale Air Force Hospital.

Discussions were held with VA hospital officials in Dayton, Ohio, and San Antonio and Dallas, Texas.

APPENDIX I

Congress of the United States

House of Representatives

Committee on Appropriations

Washington, D.C. 20515

dms

June 27, 1978

Honorable Elmer B. Staats
Comptroller General of the United States
U.S. General Accounting Office
441 G. Street, N.W.
Washington, D.C. 20548

Dear Mr. Staats:

The Committee has recently completed its hearings on the Department of Defense's medical budget request for fiscal year 1979. During the hearings we raised several questions concerning the staffing and operation of DOD's cancer treatment centers. As a result, the Committee has become concerned that these centers may not be providing optimum treatment and cost effective care to beneficiaries suffering from cancer.

The Committee understands the importance of insuring that beneficiaries suffering from cancer have access to complete and high quality care. Because of indications that it is now difficult for the military to provide complete and high quality treatment, the Committee wants to evaluate whether or not this highly specialized service should be provided in the DOD health care system or by other health care providers.

Therefore, we would like your office to examine this broad question, giving specific attention to the following:

1. Extent and distribution of cancer treatment capability throughout the United States and near the military's existing cancer treatment centers.

2. Policies and practices followed by DOD and other Federal agencies, namely the Veterans Administration and the Public Health Service, in obtaining cancer treatment for its beneficiaries.

APPENDIX I

3. Distribution of the cancer treatment workload among the various DOD beneficiary categories.

4. Potential impact of discontinuing cancer treatment in military hospitals on DOD's medical teaching program and mobilization capability.

5. Cost of providing cancer treatment in the military compared to the potential cost of using other providers, if possible.

6. Current long-range plans and costs for military construction and equipment for cancer treatment.

7. Access, in terms of geographic location and treatment modalities, that the DOD beneficiary population has to the military cancer treatment centers compared to access in the civilian sector.

The Committee is aware that the newly established Federal Health Resources Sharing Committee is planning to look at cancer treatment centers. It is not our intention to stifle the initiative of this group; on the contrary, we would like your staff, where possible, to work with or draw upon relevant work already completed by the Federal Health Resources Sharing Committee.

It would be appreciated if the final report could be received by January 31, 1979.

Finally, I want to express my appreciation for the fine work your staff has done for the Committee in the past concerning the potential for sharing medical resources in the Federal sector. I believe the reports related to this effort have clearly demonstrated to the Committee and DOD that the delivery of health care to Federal beneficiaries can be improved.

Sincerely,

Chairman

APPENDIX II

GEOGRAPHIC AREAS WITH POTENTIAL FOR SHARING RADIATION THERAPY FACILITIES

This appendix contains a listing of 23 geographic areas where Federal megavoltage radiation therapy services might be shared. In five of these areas, two Federal agencies have facilities which have megavoltage radiation therapy capabilities. The remaining 18 areas have one Federal agency with at least one megavoltage radiation therapy facility. Many of the radiation therapy facilities in these 23 geographical areas are underused, and each area has other Federal hospitals with no radiation therapy capability. Therefore, many of the 23 geographical areas hold potential for sharing a radiation therapy capability.

The tables below contain the following information:

--Identification of Federal megavoltage radiation therapy capability by hospital.

--Radiation therapy treatment workload in 1977 (in terms of treatment visits) for each Federal hospital with megavoltage equipment.

--Identification of whether the megavoltage equipment for each hospital meets various megavoltage radiation therapy yearly workload utilization criteria developed by HEW, DOD, and VA.

--Identification of nearby Federal hospitals which have no megavoltage capability and consequently are prime candidates for use of any unused capability in Federal hospitals with megavoltage capability.

The radiation therapy workload criteria for megavoltage radiation therapy equipment used by Federal agencies is as follows:

--HEW: a megavoltage radiation therapy unit should serve a population of at least 150,000 and treat at least 300 cancer cases annually. Each unit should be able to provide 6,000 treatments (visits) per year or about 25 patient treatments per day.

--DOD: the economic utilization of a megavoltage radiation therapy unit is 25 patient treatments per day or 6,350 per year.

--VA: each megavoltage radiation therapy unit should meet the established standard of 525 treatments per month (or about 6,300 per year). However, VA's Director of Radiology Service defines each "treatment field" as a treatment. According to HEW, about 2.2 treatment fields equate to each treatment visit. Therefore, for comparison purposes VA's standard is 2,865 treatment visits per year.

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The workload criteria established by the respective Federal agencies is for each megavoltage therapy unit. Therefore, a facility would have to perform the equivalent number of treatments on each unit to meet the established criteria and thereby avoid being considered underused. For example, a facility with two units striving to meet the HEW criteria would have to perform 12,000 treatments (6,000 treatments for each of the 2 units) in total.

APPENDIX II

GEOGRAPHIC AREAS WHERE TWO FEDERAL AGENCIES

HAVE MEGAVOLTAGE RADIATION THERAPY CAPABILITY

	Number of units	1977 radiation therapy treatments (note a)	Meet workload criteria established by HEW	DOD	VA
Chicago, Ill. area:					
Megavoltage capability:					
Great Lakes Naval Hospital	1	1,367	No	No	No
Hines VA Hopistal	2	11,244	No	No	Yes
Lakeside VA Hospital	1	4,132	No	No	Yes
Nearby Federal hospitals:					
North Chicago VA Hospital	None				
Westside VA Hospital	None				
New York City area:					
Megavoltage capability:					
Brooklyn VA Hospital	1	4,858	No	No	Yes
Bronx VA Hospital	2	8,700	No	No	Yes
Staten Island PHS	1	2,688	No	No	No
Nearby Federal hospital:					
New York VA Hospital	None				
Philadelphia, Pa. area:					
Megavoltage capability:					
Philadelphia Naval Hospital	1	4,302	No	No	Yes
Philadelphia VA Hospital	1	4,507	No	No	Yes
Nearby Federal hospitals:					
Watson Army Hospital	None				
Ft. Monmouth Army Hospital	None				
San Francisco, Ca. area:					
Megavoltage capability:					
Letterman Army Medical Center	1	6,086	Yes	No	Yes
Martinez VA Hospital	1	3,292	No	No	Yes
Oakland Naval Medical Center	1	3,036	No	No	Yes
Travis Air Force Medical Center	1	3,771	No	No	Yes
Nearby Federal hospital:					
San Francisco PHS Hospital	None				
Washington, D.C. area:					
Megavoltage capability:					
Bethesda Naval Medical Center	1	7,024	Yes	Yes	Yes
Malcolm Grow Air Force Medical Center	1	1,675	No	No	No
Walter Reed Army Medical Hospital	2	9,573	No	No	Yes
Washington VA Hospital	1	3,493	No	No	Yes
Nearby Federal hospitals:					
Annapolis Naval Hospital	None				
Ft. Belvoir Army Hospital	None				
Quantico Naval Hospital	None				

APPENDIX II

GEOGRAPHIC AREAS WHERE ONE FEDERAL AGENCY HAS AT LEAST ONE RADIATION THERAPHY FACILITY

	Number of units	1977 radiation therapy treatments (note a)	Meet workload criteria established by HEW	DOD	VA
Atlanta, Ga. area:					
Megavoltage capability:					
Atlanta VA Hospital	1	4,100	No	No	Yes
Nearby Federal hospital:					
Ft. McPherson Army Hospital	None				
Augusta, Ga. area:					
Megavoltage capability:					
Eisenhower Army Medical Center	1	None	No	No	No
Nearby Federal hospital:					
Augusta, Georgia VA Hospital	None				
Baltimore, Md. area:					
Megavoltage capability:					
Baltimore PHS Hospital	1	1,339	No	No	No
Nearby Federal hospitals:					
Baltimore VA Hospital	None				
Ft. Meade Army Hospital	None				
Biloxi, Miss. area:					
Megavoltage capability:					
Keesler Air Force Medical Center	1	3,526	No	No	Yes
Nearby Federal hospital:					
Biloxi VA Hospital	None				
Boston, Mass. area:					
Megavoltage capability:					
Boston VA Hospital	1	7,938	Yes	Yes	Yes
Nearby Federal hospitals:					
Boston PHS Hospital	None				
Brockton VA Hospital	None				
Ft. Devens Army Hospital	None				
West Roxbury VA Hospital	None				
Dallas, Tx. area:					
Megavoltage capability:					
Dallas VA Hospital	1	11,769	Yes	Yes	Yes
Nearby Federal hospital:					
Carswell Air Force Hospital	None				
Dayton, Ohio area:					
Megavoltage capability:					
Wright-Patterson Air Force Medical Center	1	1,400	No	No	No
Nearby Federal hospital:					
Dayton VA Hospital	None				

APPENDIX II

	Number of units	1977 radiation therapy treatments (note a)	Meet workload criteria established by HEW	DOD	VA
Denver, Co. area:					
Megavoltage capability:					
Fitzsimons Army Medical Center	1	3,434	No	No	Yes
Nearby Federal hospital:					
Denver VA Hospital	None				
Durham, N.C. area:					
Megavoltage capability:					
Durham VA Hospital	1	5,752	No	No	Yes
Nearby Federal hospitals:					
Ft. Bragg Army Hospital	None				
Seymour-Johnson Air Force Hospital	None				
Houston, Tx. area:					
Megavoltage capability:					
Houston VA Hospital	1	6,699	Yes	Yes	Yes
Nearby Federal hospital:					
Nassau Bay PHS Hospital	None				
Los Angeles, Ca. area:					
Megavoltage capability:					
Long Beach VA Hospital	1	b/2,722	No	No	No
Wadsworth VA Hospital	2	12,724	Yes	Yes	Yes
Nearby Federal hospital:					
Long Beach Naval Hospital	None				
Memphis, Tenn. area:					
Megavoltage capability:					
Memphis VA Hospital	1	4,872	No	No	Yes
Nearby Federal hospital:					
Memphis Naval Regional Medical Center	None				
Miami, Fl. area:					
Megavoltage capability:					
Miami VA Hospital	1	3,246	No	No	Yes
Nearby Federal hospital:					
Homestead Air Force Base Hospital	None				
Portsmouth Va. area:					
Megavoltage capability:					
Portsmouth Naval Medical Center	2	7,425	No	No	Yes
Nearby Federal hospitals:					
Ft. Eustis Army Hospital	None				
Langley Air Force Base Hospital	None				
Portsmouth PHS Hospital	None				
San Antonio, Tx. area:					
Megavoltage capability:					
Brooke Army Medical Center	1	2,913	No	No	Yes
Wilford Hall Air Force Medical Center	1	9,825	Yes	Yes	Yes
Nearby Federal hospital:					
San Antonio VA Hospital	None				

	Number of units	1977 radiation therapy treatments (note a)	Meet workload criteria established by HEW	DOD	VA
San Diego, Ca. area:					
Megavoltage capability:					
San Diego Naval Medical Center	2	11,223	No	No	Yes
Nearby Federal hospital:					
San Diego VA Hospital	None				
Seattle/Tacoma, Wash. area:					
Megavoltage capability:					
Madigan Army Medical Center	1	4,800	No	No	Yes
Nearby Federal hospitals:					
American Lake VA Hospital	None				
Bremerton Naval Regional Medical Center	None				
Seattle PHS Hospital	None				
Seattle VA Hospital	None				
St. Louis, Mo. area:					
Megavoltage capability:					
St. Louis VA Hospital	1	4,587	No	No	Yes
Nearby Federal hospital:					
Scott Air Force Base Medical Center	None				

a/Data for VA hospitals reflects the 12-month period from April 1977 through March 1978.

b/The Long Beach VA hospital did not provide radiation therapy to patients for 6 months during the annual period.

(101010)

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