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Cardiac catheterization is a procedure used to diagnose possible heart conditions. It is performed in 90 Federal hospitals; 66 Veterans' Administration (VA) facilities; 20 Department of Defense (DOD) facilities; 3 Public Health Service hospitals; and the National Institutes of Health clinical center in Bethesda, Maryland. Several medical professional organizations, as well as the VA, have developed guidelines for cardiac catheterization laboratories. These guidelines are intended to keep physicians' skills high and to minimize risk to patients. DOD and the Public Health Service have no such guidelines. Findings/Conclusions: The number of cardiac catheterizations being performed in DOD and VA laboratories varied considerably. For fiscal year 1976, catheterizations performed at the Federal hospitals reviewed ranged from 574 at Walter Reed in Washington, D.C., to 60 procedures at Wright Patterson in Dayton, Ohio. Also, there was no correlation between the number of catheterizations performed and the number of physicians performing them. In addition, physicians at the hospitals had differing views of the number of catheterizations that should be performed to maintain their proficiency. In each of four geographic areas visited, there were opportunities to provide cardiac catheterization on a shared basis which could increase patient safety and reduce costs to the Government. The sharing opportunities could be accomplished within the framework of present laws governing DOD and VA operations. Recommendations: The Secretaries of Defense and Health, Education, and Welfare (HEW) and the Administrator of Veterans Affairs should: (1) jointly develop uniform Federal guidelines for the planning and use of Federal cardiac catheterization laboratories which associate the number of catheterization procedures to be performed with the number of physicians that should perform them; (2) consider what variances from these guidelines might be appropriate; (3) jointly analyze the use

levels at the laboratories and adjust the manner in which this diagnostic service is provided, and, where feasible, provide cardiac catheterization on a joint or shared basis in a single Federal facility; and (4) discontinue providing the procedure in Federal facilities in geographic areas where the Federal guidelines cannot be met and obtain this service from nearby civilian hospitals. The Director of the Office of Management and Budget should oversee the efforts of DOD, HEW, and the VA in developing uniform Federal guidelines for the planning and use of Federal cardiac catheterization laboratories to insure it is accomplished in an appropriate and timely manner. (Author/SW)

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# REPORT TO THE CONGRESS

BY THE COMPTROLLER GENERAL  
OF THE UNITED STATES

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## Sharing Cardiac Catheterization Services: A Way To Improve Patient Care And Reduce Costs

Cardiac catheterization is a procedure used to diagnose heart conditions. Many Federal cardiac catheterization laboratories are underused. However, if laboratories are shared, patient care could be improved and money could be saved.

To facilitate sharing, the Departments of Defense and Health, Education, and Welfare and the Veterans Administration need to jointly develop uniform guidelines for planning and using cardiac catheterization laboratories. Also, there are opportunities to share now in Washington, D.C.; Dayton, Ohio; Tucson, Arizona; and Augusta, Georgia.

The three agencies agreed that uniform Federal guidelines are needed and have started developing them.



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

B-133044

To the President of the Senate and the  
Speaker of the House of Representatives

This report discusses opportunities for the Departments of Defense and Health, Education, and Welfare; and the Veterans Administration to improve patient care and reduce costs by providing cardiac catheterization--a diagnostic technique for heart ailments--on a shared basis in the Federal hospital system.

Our review was made at the request of the Chairman, Committee on Appropriations, House of Representatives; and pursuant to the Budget and Accounting Act, 1921 (31 U.S.C. 53), and the Accounting and Auditing Act of 1950 (31 U.S.C. 67).

We are sending copies of this report to the Acting Director, Office of Management and Budget; the Secretaries of Defense and Health, Education, and Welfare; and the Administrator of Veterans Affairs.

*Henry B. Stearns*  
Comptroller General  
of the United States

COMPTROLLER GENERAL'S  
REPORT TO THE CONGRESS

SHARING CARDIAC CATHETERIZATION  
SERVICE: A WAY TO IMPROVE PATIENT  
CARE AND REDUCE COSTS

D I G E S T

Cardiac catheterization is a procedure used to diagnose possible heart conditions. It is done in 90 Federal hospitals: 66 Veterans Administration (VA) facilities; 20 Department of Defense facilities; 3 Public Health Service hospitals; and the National Institutes of Health clinical center in Bethesda, Maryland. Several medical professional organizations, as well as VA, have developed guidelines for cardiac catheterization laboratories. These guidelines are intended to keep physicians' skills high and to minimize risk to patients. Defense and the Public Health Service have no such guidelines.

Many of the Defense and VA laboratories in Washington, D.C.; Dayton, Ohio; Tucson, Arizona; and Augusta, Georgia, were used far below the levels recommended by VA and medical organizations. Also, the number of catheterizations and the number of physicians doing them were not correlated. (See p. 11.)

Physicians should do a certain number of catheterizations within a certain time to keep proficient in the procedure. Physicians disagreed about the exact number needed to maintain proficiency. To some extent their opinions mirrored their laboratories' use level.

GAO believes that sharing can be done within the framework of present laws governing Defense and VA facilities. However, several administrative problems now inhibit sharing of facilities. GAO is studying these problems in a separate review and will recommend actions to eliminate or minimize them. Nevertheless, since the barriers are administrative, Defense; Health, Education, and Welfare (HEW); and VA can begin to share facilities. This would seem not only to foster better patient care, but, also to result in reduced costs. (See pp. 34 and 35 .)

HRD-78-14

## RECOMMENDATIONS AND AGENCY COMMENTS

The Departments of Defense and HEW and VA should develop uniform guidelines for planning and using Federal cardiac catheterization laboratories. These guidelines should associate the number of catheterizations with the number of physicians doing them and should identify situations where variances would be appropriate. (See pp. 35.)

The three agencies agree that uniform Federal guidelines with appropriate variances are needed and they have started to develop them.

After the guidelines are established, the three Federal agencies should jointly analyze their laboratories' use levels and adjust laboratory services to conform to the guidelines. Adjustment should include providing cardiac catheterization on a shared basis in a single Federal facility where possible. At locations where the guidelines cannot be met, closing the Federal cardiac catheterization laboratories and using nearby civilian hospitals should be considered. (See p. 35.)

Defense and VA generally agree that the use of cardiac catheterization laboratories should be analyzed once the uniform Federal guidelines are developed. However, both agencies said that closing them may not always be best if the guidelines cannot be met. GAO agrees that flexibility in the guidelines is needed; however, unless they clearly identify when continued operation is no longer best, their value would be diminished. (See p. 38.)

The Office of Management and Budget should monitor the efforts of the three agencies in developing uniform guidelines for cardiac catheterization laboratories. (See p. 36.)  
The Office agrees.

The specific opportunities for sharing that GAO recommends the three agencies pursue are:

--In the Washington, D.C., area close the cardiac catheterization laboratory at the Malcolm Grow hospital and assess whether

the planned replacement of the catheterization laboratories at the Bethesda Naval hospital and the VA hospital is appropriate in view of the expected capability at Walter Reed.

Defense agreed to close the Malcolm Grow laboratory, but strongly believed the new Bethesda laboratory was needed. VA said the new laboratory at its Washington hospital was also needed. (See p. 38.)

--In the Tucson, Arizona, area establish an agreement for providing cardiac catheterization to Federal beneficiaries on a shared basis using the VA hospital.

Both Defense and VA agreed that the Tucson VA hospital could provide catheterization to military patients but said the specific arrangements would have to be studied further. (See p. 39.)

--In the Augusta, Georgia, area explore the possibility of consolidating both cardiac catheterization and cardiovascular surgery capabilities in the new Dwight D. Eisenhower facility.

Defense and VA have discussed this opportunity for sharing and VA will visit the facility in late 1977 for further discussions. (See p. 39.)

--In the Dayton, Ohio, area establish an agreement for providing cardiac catheterization on a shared basis using the Dayton VA hospital--provided the combined use levels are in harmony with the Federal guidelines when they are established. Explore whether cardiovascular surgery can be justified on the basis of combined workloads of Wright-Patterson and the Dayton VA hospitals. (See pp. 39 and 40.)

VA agreed with GAO's recommendation and Defense proposed another alternative which may be reasonable but will require further evaluation by both agencies.

GAO commends the three agencies for the prompt action taken since June 1977 to begin the joint development of the uniform Federal cardiac catheterization guidelines and to consider the broader question of sharing Federal medical facilities in general.

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ABBREVIATIONS

CHAMPUS	Civilian Health and Medical Program of the Uniformed Services
DOD	Department of Defense
GAO	General Accounting Office
HEW	Department of Health, Education, and Welfare
NIH	National Institutes of Health
OMB	Office of Management and Budget
PHS	Public Health Service
VA	Veterans Administration

## CHAPTER 1

### INTRODUCTION

The Department of Defense (DOD), Veterans Administration (VA), and Department of Health, Education, and Welfare (HEW) operate separate hospital systems which, taken together, can be looked at as the Federal hospital system. VA operates 171 hospitals, and HEW operates 8 Public Health Service (PHS) hospitals, 51 Indian Health Service hospitals, and the National Institutes of Health (NIH) clinical center. DOD has 133 hospitals in the continental United States--36 of which are operated by the Army, 27 by the Navy, and 70 by the Air Force. DOD also has 54 other hospitals in Alaska, Hawaii, Canada, Europe, and other parts of the world.

In response to a request from the Chairman, Committee on Appropriations, House of Representatives (see app. I), we have reviewed the utilization of Federal cardiac catheterization laboratories and the opportunities for providing catheterization on a shared basis.

### CARDIAC CATHETERIZATION

Cardiac catheterization is a procedure used to diagnose possible heart conditions. It is primarily performed to determine whether a patient needs cardiovascular surgery, and various studies indicate that about one third of the patients catheterized are recommended for open heart surgery. Cardiac catheterization procedures are performed in laboratories which can be dedicated or nondedicated. A dedicated laboratory is devoted almost exclusively to cardiac catheterization and rarely used for other procedures. A nondedicated laboratory is a multipurpose special procedures room where cardiac catheterizations, as well as procedures by other departments such as radiology and neurology, are performed using many of the same equipment items.

Cardiac catheterization is performed on an inpatient basis by a team of specially trained physicians, nurses, and technicians and usually involves a hospital stay of about 2 days. The catheterization process involves inserting a thin, flexible tube (catheter) into a blood vessel in the patient's arm or leg and moving it through the vessel into the heart chambers. There, blood samples are taken; diagnostic

measurements are made; and various studies of the heart, such as coronary arteriography, 1/ are performed.

Cardiac catheterization procedures entail some risk to patients. Patients undergoing catheterization may suffer a mild aching in the area of the catheter insertion, hot flashes, heart palpitations, dizziness, nausea, or a drop in blood pressure. More serious, but less frequent, complications are blood clots, blood vessel perforation, catheter breakage, kidney failure, shock, heart attack, or death.

As a general rule, however, as volume and experience increase, complications decrease. This rule was borne out by a study of complication rates associated with coronary arteriography published in Circulation magazine 2/ in September 1973. Overall the study indicated that death or serious nonfatal complications occurred in 1.5 percent of all patients examined. It further indicated that such problems occur 10 times more often in hospitals performing fewer than 100 examinations per year than in those performing more than 400 examinations annually. Moreover, reported death rates vary from 0.05 percent in hospitals performing more than 400 examinations to 8 percent in hospitals performing less than 100 examinations.

In the continental United States, cardiac catheterization is performed in 90 Federal hospitals--66 VA hospitals, 20 DOD hospitals, 3 PHS hospitals, and the NIH clinical center hospital in Bethesda, Maryland. 3/ Several areas of the country have more than one Federal hospital with cardiac catheterization capability. For example, in the Washington, D.C., metropolitan area there is one VA hospital, three DOD hospitals, and the NIH center with such capability. A map showing the locations of Federal cardiac catheterization laboratories is on page 3. In addition, a photograph of a catheterization laboratory is shown on page 4.

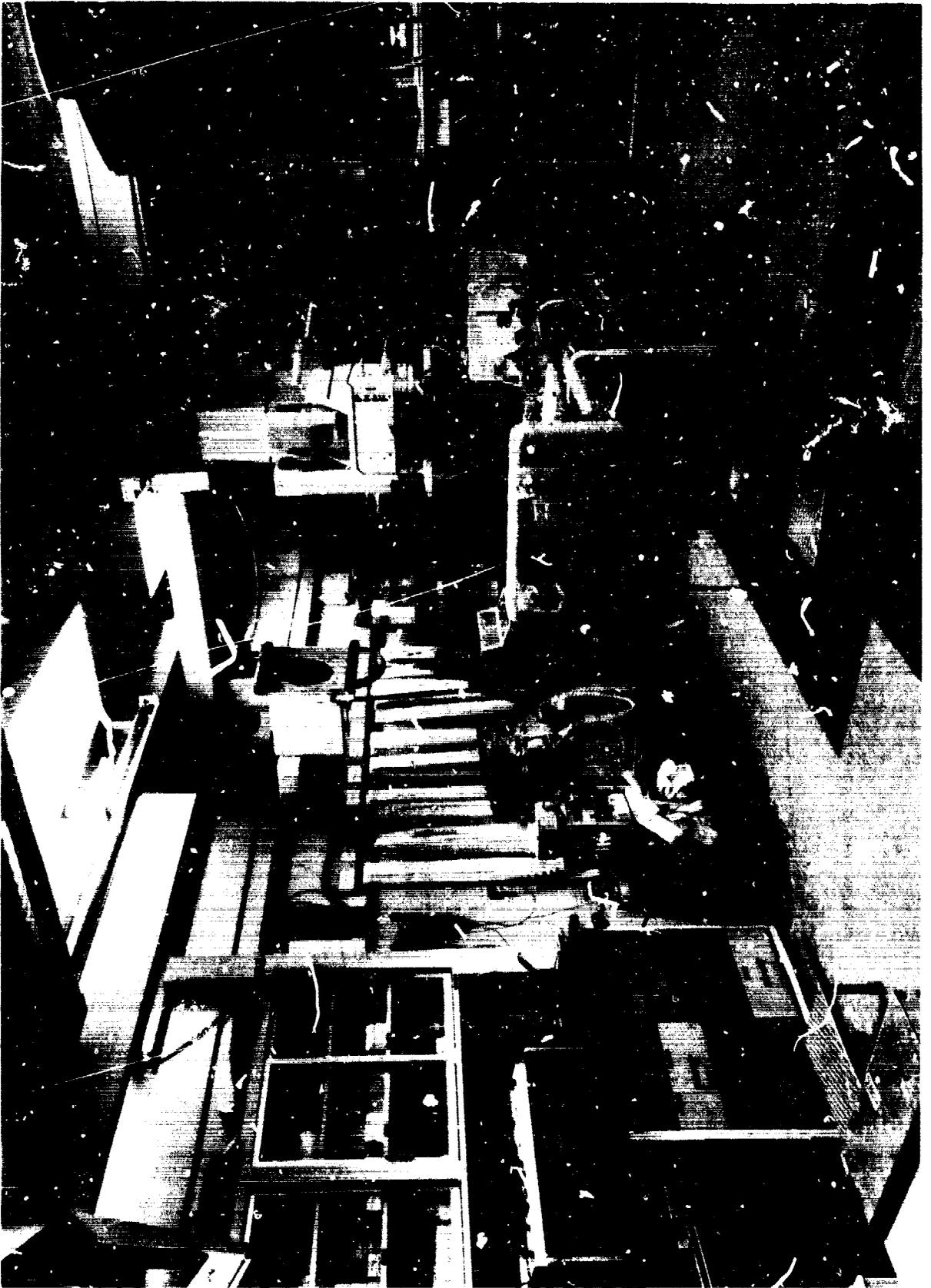
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1/Using a dye fed through the catheter as a contrast medium, X-ray images are made which show obstructions and other damage to the heart and arteries.

2/An official journal of the American Heart Association, Inc.

3/Cardiac catheterization is not provided in Indian Health Service hospitals.





Cardiac catheterization laboratory at Walter Reed Army Medical Center, Washington, D.C.

ELIGIBILITY FOR CARE IN  
DOD, VA, AND PHS HOSPITALS

Each Federal agency primarily serves a group of beneficiaries defined by law. However, one agency may provide medical care to another agency's beneficiaries under certain sharing arrangements. Any agency may also provide medical care to all persons on an emergency basis.

Title 10 of the United States Code states that care in DOD medical facilities is provided for active duty military personnel and, subject to availability of space, facilities, and staff, for dependents of active duty personnel, retirees, and dependents of retired and deceased personnel.

Military beneficiaries, other than active duty personnel, may also receive medical care from civilian sources under the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS). Generally before using civilian sources, eligible military beneficiaries within 40 miles of a military hospital must obtain a nonavailability statement from an official at that military hospital certifying that it is not practical, or the hospital is unable, to furnish the required inpatient care. The Government pays most of the costs of medical care provided to eligible beneficiaries from civilian sources. All retirees and dependents of retired and deceased personnel who are eligible for Medicare upon reaching age 65 lose their CHAMPUS benefits at that time. However, these beneficiaries are still eligible for care in military facilities, and some are also eligible for care in VA facilities.

Title 38 of the United States Code authorizes VA to provide medical care to (1) veterans of any war who have a service-connected disability incurred or aggravated during a period of war, (2) veterans who have any other disability if they are unable to pay for necessary hospital care, (3) veterans whose discharge or release from active military duty was for a disability incurred or aggravated in the line of duty, and (4) any person who receives or is eligible to receive military retirement pay or would be entitled to disability compensation. VA can also provide care to the spouses and children of veterans who died or were totally disabled as a result of a service-connected disability either through a program similar to CHAMPUS or in a VA hospital.

Title 42 of the United States Code provides that PHS hospitals can care for U.S. seamen, PHS commissioned officers, Coast Guard personnel, and other individuals under certain circumstances.

## SCOPE OF REVIEW

Our review was performed at DOD and VA headquarters in Washington, D.C., and at DOD and VA hospitals located in the Washington, D.C.; Augusta, Georgia; Dayton, Ohio; and Tucson, Arizona; areas. The review included detailed verifications of hospital records on cardiac catheterizations performed in the Federal hospitals in these areas during fiscal years 1975 and 1976. We reviewed available records to determine:

- The number of catheterizations performed.
- The overall capability of each laboratory.
- The extent of sharing done with other Federal facilities.
- The status of any planned or ongoing construction or installation of equipment at catheterization laboratories.

There were no PHS hospitals in the four geographic areas we visited. Our review of PHS catheterization data was limited to information obtained by telephone from PHS headquarters. Information concerning the reported workloads at the three PHS hospitals performing cardiac catheterization is shown in appendix VI.

We did not review the NIH catheterization program because it is primarily a research program.

In addition, the Committee requested that we obtain data regarding the capability of cardiac catheterization laboratories in the civilian sector. We obtained this information through discussions with officials of civilian hospitals in the areas included in our review.

## CHAPTER 2

### PROVIDING CARDIAC CATHETERIZATION ON A SHARED BASIS COULD IMPROVE PATIENT CARE AND REDUCE COSTS

In each of the four areas visited, we found opportunities for DOD and VA to share cardiac catheterization facilities. By taking advantage of these opportunities DOD and VA could enhance patient safety and reduce costs to the Government.

Several medical professional organizations and VA have set forth guidelines for planning cardiac catheterization laboratories. Included in these guidelines are recommended workload levels. One of the professional association guidelines also correlates the recommended catheterization workload with the number of physicians that should be performing those procedures. Although the various guidelines differ on the specific number of procedures that should be performed annually, they clearly attest to the importance of establishing guidelines to assure an adequate level of proficiency and to reduce patient risk.

The number of cardiac catheterizations being performed in DOD and VA laboratories varied considerably. For fiscal year 1976, catheterizations performed at the Federal hospitals included in our review ranged from 574 at Walter Reed in Washington, D.C.--which has two dedicated laboratories--to 60 procedures at Wright Patterson in Dayton, Ohio--which shares a laboratory with the radiology department.

More important than the mere number of catheterizations performed in an individual hospital is the number of catheterizations performed by a physician, or team of physicians, with the appropriate support staff. A physician or team should perform at least a certain number of catheterizations so that a certain degree of proficiency can be maintained. Yet in this regard, at the hospitals we visited there was no correlation between the number of cardiac catheterizations performed and the number of physicians performing them.

Physicians at the hospitals we visited had differing views on the number of catheterizations that should be performed to maintain proficiency. To some extent, their opinions appeared to mirror use levels at their laboratories.

We believe that uniform guidelines for the planning and use of Federal cardiac catheterization laboratories should be

developed. In order to make the guidelines more meaningful and to provide greater assurance of patient safety, they should associate the number of procedures to be performed with the number of physicians that should be performing them. Such guidelines would make it easier for DOD, VA, and PHS to provide catheterization service on a shared basis by establishing uniform criteria for the operation of all Federal cardiac catheterization laboratories.

#### EXISTING GUIDELINES FOR CARDIAC CATHETERIZATION LABORATORIES

Several professional organizations, local health planning organizations, and VA have developed guidelines for cardiac catheterization laboratories. These guidelines set forth workload levels for performing catheterizations which are intended to minimize risk to the patient. DOD and PHS have not developed guidelines regarding the use of their cardiac catheterization laboratories.

The guidelines of several organizations which came to our attention during our review were:

- A report by the American Heart Association in 1974 which recommended that centers caring for adult patients with heart disease should perform a minimum of 250 catheterizations a year. This report also suggested that cardiac catheterization laboratories be located at hospitals where cardiovascular surgery is performed.
- The Joint Commission on Accreditation of Hospitals adopted guidelines in 1974 which suggested that 250 catheterizations a year was essential to maintain a high level of care. The Joint Commission said that cardiovascular surgery could be provided in the same hospital or through an agreement with a nearby hospital.
- A June 1976 study performed by the San Francisco Bay Area Comprehensive Health Planning Council recommended 300 catheterizations per year as the minimum needed to maintain skills of a catheterization team. The study report said that cardiac catheterization facilities in hospitals without cardiovascular surgery programs should meet all requirements for (1) number of procedures performed, (2) staffing, and (3) equipment. In addition there

must be a written agreement between the institution providing cardiovascular surgery and the one performing catheterization specifying a mechanism for insuring quality control, rapid referral for surgery, emergency backup procedures, and regular communication between the cardiologists performing catheterization and the surgeons to whom patients might be referred.

--VA outlined workload standards for various specialized medical services in a July 1975 directive. The standard for cardiac catheterization was 150 patients per year for every 4 full-time employees in a catheterization laboratory, but a minimum annual caseload of 125 patients was permitted. 1/

Perhaps the most comprehensive guideline is the "Report of the Inter-Society Commission for Heart Disease Resources" which was published in Circulation magazine in February 1976. It set forth workload recommendations, discussed staffing patterns, and addressed the question of the inter-relationship of cardiac catheterization and cardiovascular surgery. This report characterized its guidelines as optimal objectives rather than minimal standards. A primary purpose of the report was

"to encourage development of laboratories in settings capable of generating that critical density of clinical experience required to maintain performance at the highest level of diagnostic skill with maximum patient safety."

The report stated that the rapidly expanding role of catheterization procedures in diagnosis placed a heavy responsibility on hospitals to assure that performance was maintained at the highest possible level. In order to maintain adequate performance levels and to minimize patient risk, it recommended that each team of physicians perform on the average at

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1/This directive expired May 31, 1976. At the time of our fieldwork, a revised directive was being written. VA officials said that they expected to eliminate the minimum caseload of 125 patients but retain the 150 patient standard.

least 6 adult cardiac catheterizations a week or 300 per year. 1/

Regarding staffing, the report suggested that two physicians and appropriate support staff should be in the laboratory during catheterization procedures. The report also suggested that this staff represented the team to which its recommended caseload should be applied.

The report further stated that cardiac catheterization laboratories should be located only at centers where cardiovascular surgery is regularly performed and suggested that the proliferation of laboratories in hospitals that do not have cardiovascular surgery should be discouraged.

The guidelines established by VA and the professional organizations do not agree on the number of catheterization procedures that should be performed annually. It is clear, however, that they recognize the importance of establishing workload guidelines to assure an adequate level of proficiency and to reduce risk to patients.

#### USE OF FEDERAL CARDIAC CATHETERIZATION LABORATORIES VARIES WIDELY

We analyzed use levels at five DOD and four VA hospitals for fiscal years 1975 and 1976. As shown in the table below, use levels during fiscal years 1975 and 1976 varied widely in the catheterization laboratories reviewed. In addition, no correlation existed between the number of catheterizations performed and the number of physicians performing the catheterizations.

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1/The report suggested that the recommended workload could be reduced as much as 50 percent for laboratories that did not perform coronary studies, including coronary arteriograms. At each of the laboratories we visited, a substantial portion of the cardiac catheterizations performed included coronary arteriogram studies.

Use of Cardiac Catheterization Laboratories  
Fiscal years 1975 and 1976

<u>Hospital</u>	<u>Cardiac catheterization (note a)</u>		<u>Number of physicians performing cardiac catheterizations (note c)</u>	
	<u>1975</u>	<u>1976</u>	<u>1975</u>	<u>1976</u>
<b>DOD:</b>				
Walter Reed	552	574	7	6
Bethesda	228	247	6	6
Malcolm Grow	67	98	4	4
Wright-Patterson	37	60	2	2
Eisenhower	(b)	b/70	(b)	(b)
<b>VA:</b>				
Washington	190	247	2	3
Dayton	61	66	3	3
Augusta	119	150	2	2
Tucson	69	1	(d)	1

a/Data does not include temporary or permanent pacemaker insertions, except in the fiscal year 1975 Tucson data.

b/Eisenhower hospital did not begin operating its cardiac catheterization laboratory until May 1976. Data is for May 1976 through November 1976.

c/Data reflects staff physicians who were assigned to the hospital for at least 11 months of each fiscal year and who did not regularly perform catheterizations at other hospitals.

d/During fiscal year 1975 the catheterizations at the Tucson VA hospital were performed by a doctor from the University of Arizona hospital, which is affiliated with the VA hospital.

As can be seen from the above table, Walter Reed, Bethesda, and the Washington VA hospitals had high use levels compared to the other hospitals.

The other Federal hospitals, with the exception of the Augusta VA hospital in fiscal year 1976, were operating well below both the VA's workload criteria of 150 patients per year and the guidelines of the medical professional organizations which ranged from 250 to 300 catheterizations per year.

The number of physicians performing catheterizations at individual hospitals also differed. At some locations such as Malcolm Grow there seemed to be a relatively large number of physicians performing catheterizations. Several of the hospitals visited were teaching facilities, namely Walter Reed and Bethesda, and the Washington, Augusta, and Tucson VA hospitals. These facilities had residency programs in cardiology, and physicians in training also performed cardiac catheterizations, thus spreading the workload among a larger number of individuals than is reflected on the previous table. Our review of fiscal year 1976 records reflecting cardiac catheterization work at the 9 Federal hospitals showed that only 3 physicians excluding fellows and residents, were involved in over 100 catheterizations and none were involved in as many as 150.

In addition, hospitals had different approaches to assigning the catheterization workload to individual physicians. At Malcolm Grow, for example, the cardiologist who examined the patient on an outpatient basis performed the cardiac catheterization. At other hospitals, an effort was made to distribute the workload evenly among the cardiologists by assigning them specific days to perform catheterizations.

#### Physicians' views on workload and recommended guidelines

At each of the hospitals visited, we asked medical officials to comment on the reasonableness of recommended catheterization workload guidelines. Their responses varied considerably.

At Walter Reed, where 574 catheterizations were performed in fiscal year 1976, medical officials agreed with the American Heart Association's recommended minimum of 250 per year. However, at Wright-Patterson, where only 60 catheterizations

were performed in fiscal year 1976, the chief cardiologist considered 75 per year to be adequate to maintain proficiency.

At the Washington and Augusta VA hospitals where over 150 catheterizations were performed in fiscal year 1976, medical officials said that 100 to 150 a year was appropriate. On the other hand, at Dayton, where only 66 catheterizations were performed in fiscal year 1976, the chief of cardiology believed that proficiency could be maintained with about 75 procedures per year. Also, at Tucson, where 117 catheterizations were performed in fiscal year 1976, the chief of cardiology believed that at least 150 should be performed each year.

Physicians at the civilian hospitals we visited or contacted also had varying opinions about the number of procedures that should be performed for an individual to maintain proficiency. These physicians stressed the importance of other factors, such as training, experience, and ability. One cardiologist pointed out that a danger in establishing a minimum number of procedures was that it might encourage unnecessary catheterizations.

#### ABSENCE OF COORDINATED FEDERAL PLANNING FOR CARDIAC CATHETERIZATION LABORATORIES

At the present demand levels there is, or will soon be, an excess of Federal laboratories to perform cardiac catheterizations in each of the four geographic areas we visited. This situation has resulted, in part, from the absence of requirements for coordinated Federal planning. Both DOD and VA have regionalization programs which are intended to improve the utilization of the medical facilities of each agency. However, there is little, if any, coordination between VA and DOD regarding the establishment and replacement of cardiac catheterization facilities.

#### VA's and DOD's approaches to planning cardiac catheterization laboratories

In a recent report on cardiac catheterization in VA, <sup>1/</sup> we pointed out that VA justified most of its laboratories on

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<sup>1/</sup>"Many Cardiac Catheterization Laboratories Underused in Veterans Administration Hospitals: Better Planning and Control Needed" (HRD-76-168, Feb. 28, 1977.)

the basis of (1) a need to have complete diagnostic facilities, (2) a need to provide adequate training to medical students, (3) a need for complete facilities to help recruit and retain staff cardiologists, and (4) a plan to become referral centers for cardiac patients. Yet, we found that the VA central office had permitted laboratories to come into existence without adequately determining whether they were needed; that plans by VA hospitals to become major VA referral centers for cardiac catheterization and cardiovascular surgery had not been coordinated at the headquarters or district level; and that there was no overall guidance for or control over sharing arrangements between VA hospitals. While VA did not concur with all the recommendations made in our report, it did indicate that better data would be obtained for planning additional laboratories.

Requests for cardiac catheterization laboratories in DOD are generally initiated at the hospital level. However, we found no specific criteria which would serve as a planning tool in deciding where to establish catheterization laboratories. According to DOD officials, hospital mission statements, which are quite general in nature, provide the basic authority to establish laboratories. Available justification documents concerning several cardiac catheterization projects related primarily to equipment needs rather than to the overall need to provide cardiac catheterization.

According to officials of both DOD and VA, planning for the establishment and replacement of cardiac catheterization laboratories is kept primarily within agency boundaries with little, if any, interaction between DOD and VA.

#### Regionalization within DOD and VA

Regionalization refers to efforts within a particular Federal agency to organize and manage all elements of its health care delivery system in specified geographic areas. The overall goals are to increase productivity, achieve economy, and limit unnecessary duplication.

VA's present regionalization structure is made up of 28 medical districts. One hospital director in each district serves as Medical District Director.

DOD's health care system is made up of the Army Medical Department, the Navy Medical Department,<sup>1/</sup> the Air Force Medical Service, and the Office of the Assistant Secretary of Defense for Health Affairs. Each service has organized its health care system in the United States according to geographic areas. The Navy has 18, the Army has 7, and the Air Force has 6. The systems of each service provide outpatient care at clinics and hospital outpatient departments, routine inpatient care in hospitals and medical centers, and highly specialized care at medical centers. Also, DOD has established a Tri-Service Regionalization Health Service System which divides the United States into 13 regions. These are in addition to the regions of the respective military services.

To further improve the planning and coordination of health care delivery in the United States, the Secretary of Defense established in December 1976 a DOD Health Council to operate as a coordinating mechanism for planning and allocating resources for health care delivery in the continental United States. The Council also keeps the Secretary of Defense advised on overall DOD health care matters.

SPECIFIC GEOGRAPHIC AREAS OFFER  
OPPORTUNITIES TO SHARE CARDIAC  
CATHETERIZATION CAPABILITY

Public Law 89-785 authorizes VA to share its specialized medical resources with other Federal hospitals and clinics and to use the resources of other hospitals when needed services are not available in VA facilities. The Economy Act (31 U.S.C. 686) provides Federal agencies with the authority to purchase supplies, equipment, and services from one another. This legislation is the basis for a number of informal sharing arrangements among several Federal hospitals.

All of the geographic areas we visited had, or will soon have, cardiac catheterization capability which exceeds demand. In each area, there were opportunities to share this capability, thereby enhancing patient safety and reducing costs. The specific opportunities for sharing cardiac catheterization capability discussed below illustrate the

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<sup>1/</sup>The Navy Medical Department also provides medical care to the Marine Corps.

manner in which this diagnostic service could be provided so as to

- maximize workloads in individual hospitals and
- retain cardiac catheterization in hospitals where cardiovascular surgery capability either exists, is planned, or might be justified.

The sharing opportunities discussed below could be accomplished within the framework of present laws governing the operations of DOD and VA. However, a number of administrative barriers, such as the absence of a standard method of reimbursement, hinder sharing facilities. We are analyzing the barriers in depth as part of another review and will suggest methods to eliminate or minimize them as a result of that effort.

#### Washington, D.C.

Cardiac catheterization in the Washington, D.C., area is provided by three DOD hospitals, one VA hospital, and eight civilian hospitals. The Federal hospitals and six of the civilian hospitals performed a total of about 3,130 and 3,250 catheterizations in fiscal years 1975 and 1976, respectively. The four Federal hospitals accounted for about 33 percent of the catheterizations performed in fiscal year 1975 and 36 percent of those done in fiscal year 1976. Officials of many of the hospitals, both Federal and civilian, that we contacted said they had or would soon have the capability to perform more catheterizations. The following table summarizes information about each Federal hospital and its catheterization capability.

Federal Hospital Basic Information

<u>Hospital</u>	<u>Number of beds</u>	<u>Dedicated laboratory (note a)</u>	<u>Cardio-vascular surgery</u>	<u>Fiscal year 1976 catheter-ization workload</u>	<u>Percent of workload from DOD's Region 11 (note b)</u>
Washington VA	708	yes	yes	247	(c)
Walter Reed	876	d/ yes	yes	574	44
Bethesda	517	yes	yes	247	40
Malcolm Grow	285	no	no	98	70

a/A dedicated laboratory is devoted mainly to cardiac catheterization.

b/Includes Washington, D.C.; Maryland; West Virginia; and northern Virginia.

c/Not applicable.

d/Hospital maintains two laboratories.

Of the above mentioned four Federal hospitals, Malcolm Grow is the farthest from the center of Washington--about 10 miles. The greatest distance between Federal hospitals providing cardiac catheterization is 17 miles. A map showing the location of Federal and civilian hospitals providing cardiac catheterization in the Washington, D.C., area is shown on page 19.

#### VA hospital

The Washington VA hospital has a dedicated catheterization laboratory which was completed in 1967. The chief of the cardiac catheterization laboratory said that the laboratory was frequently not operational because of equipment breakdowns. During fiscal year 1976, four doctors 1/ performed cardiac catheterizations; however, three others were capable of performing these procedures. Catheterization teams at the VA hospital generally consist of two physicians, one nurse, and two technicians. The hospital also has cardiovascular surgery capability and the chief of the catheterization laboratory believed it was desirable to have this capability as emergency backup during catheterization procedures. He estimated that cardiovascular surgery was needed in connection with cardiac catheterization from one to three times per year.

A new catheterization laboratory is under construction and is expected to be completed by April 1978. The cost, including equipment, is estimated to be \$1 million. The chief of the catheterization laboratory said that when the new laboratory is completed his staff would be able to perform about 700 catheterization procedures per year if support staff were increased.

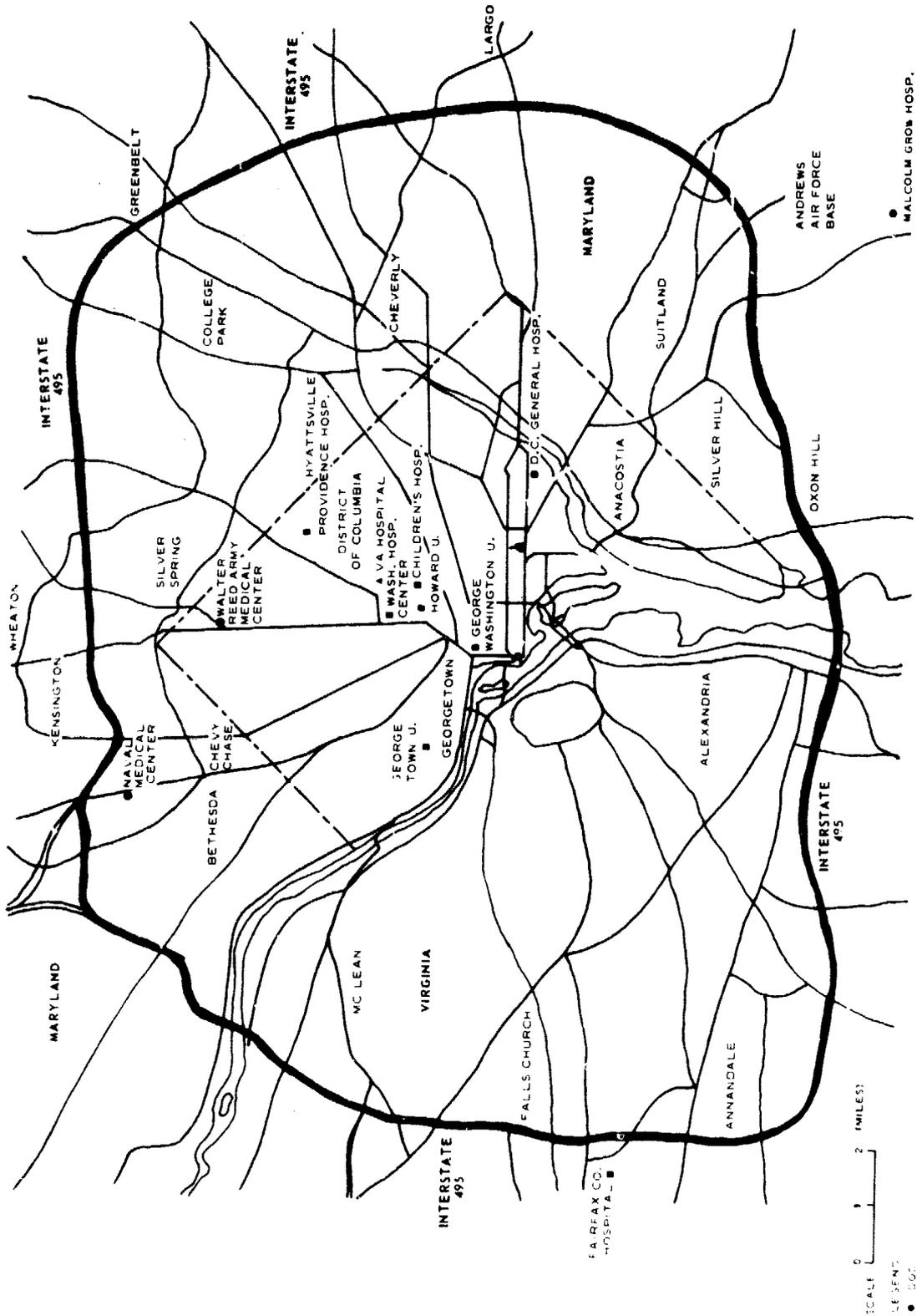
#### Walter Reed Army Medical Center

Walter Reed has two dedicated cardiac catheterization laboratories which provide catheterization for adults and children. One is used mostly as a backup laboratory and for minor procedures such as pacemaker insertions. The other has newer equipment and is used for the more critical procedures. During fiscal year 1976, five cardiologists performed adult catheterizations and one performed pediatric catheterizations. Walter Reed also has cardiovascular surgery

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1/One of the four doctors was only at the hospital for 9 months.

CARDIAC CATHETERIZATION CAPABILITY IN WASHINGTON D.C. AREA



capability. The chief of cardiology believed it was needed as a backup for cardiac catheterization since the need for open-heart surgery as a result of catheterization arises once or twice per year.

A new 1,200 bed hospital, estimated to cost \$136 million, is under construction at Walter Reed. Two new cardiac catheterization laboratories will be included in this new hospital and should be completed during the last quarter of calendar year 1977. The specific costs attributable to the new laboratories were not broken out of the \$136 million. Walter Reed officials plan to move the equipment from one of the existing cardiac catheterization laboratories into one of the new laboratories and purchase new equipment for the other new laboratory at an estimated cost of \$780,000. Assuming the necessary staff is available, Walter Reed officials estimate that the combined capability of the two new laboratories at about 1,000 to 1,200 catheterizations per year.

National Naval Medical Center, Bethesda

During fiscal year 1976 Bethesda had six cardiologists performing catheterizations--four for adults and two for children. There are usually three doctors present during a catheterization procedure--one staff cardiologist, a first-year resident, and a second-year resident. Also present are supporting technicians and nurses. The chief of cardiology said that capability could be increased by operating the catheterization laboratory longer hours. To do this, he said personnel would have to be hired and trained to perform the nontechnical duties now performed by the technical staff. While Bethesda had cardiovascular surgery capability, the chief of cardiology did not believe it was essential in order to perform catheterizations.

The Bethesda hospital is being replaced, and a dedicated catheterization laboratory is to be included in the new facility to be completed by January 1980. Total cost of the new hospital is estimated at \$61 million. Construction costs were not accumulated in a manner which would specifically identify the cost of the catheterization laboratory; however, equipment for the new laboratory is estimated to cost an additional \$733,000.

### Malcolm Grow Air Force Medical Center

During fiscal year 1976, Malcolm Grow had four cardiologists performing cardiac catheterizations. The chief of the catheterization laboratory said that his equipment is often not working and requires considerable maintenance. He said that while the quality of catheterization results are satisfactory, it is lower than what could be obtained on new equipment. The team performing cardiac catheterizations generally consists of two cardiologists, two X-ray technicians, and three cardiopulmonary technicians.

Malcolm Grow does not have cardiovascular surgery capability. The chief of cardiology did not believe it was necessary to have cardiovascular surgery capability at the hospital. He said that high-risk patients, those with known serious heart problems which increase the likelihood of problems during catheterization, are referred to Walter Reed or Bethesda for catheterization. In addition, patients requiring cardiovascular surgery after catheterization can be transferred to either Walter Reed or Bethesda.

A hospital addition is being planned for Malcolm Grow which, according to the chief of cardiology, will include a new cardiac catheterization laboratory. According to hospital officials, the new addition is to be included in the DOD fiscal year 1979 construction program.

### Civilian hospitals

At the time of our fieldwork, most of the eight hospitals in the Washington, D.C., area providing cardiac catheterization service also had cardiovascular surgery capability. One additional hospital planned to open a catheterization laboratory in early 1977. We were only able to obtain data on cardiac catheterizations from six of the eight hospitals. However, we believe this was a sufficient cross section to demonstrate that substantial catheterization capability existed.

The recent use level at these six hospitals ranged from about 100 to about 940 catheterizations per year according to hospital officials. Officials at two of the hospitals having both cardiac catheterization and cardiovascular surgery capability said they have planned new laboratories which will substantially increase capability. Another official said his laboratory already had considerable unused capability.

Opportunities for sharing  
in Washington, D.C.

The four Federal hospitals performed about 1,037 cardiac catheterizations in fiscal year 1975 and 1,166 in fiscal year 1976. The capability to provide cardiac catheterization in the Federal sector will increase in the next few years with the completion of several new laboratory and equipment replacement projects, assuming the necessary staff will be available. Equipment for these projects is estimated to cost \$2.5 million.

There is some question regarding whether workload will increase, at least in the near future, to effectively use this expected capability. In fiscal year 1976 only 44 percent of Walter Reed's workload came from Washington, D.C.; Virginia; West Virginia; and Maryland--the area it is primarily intended to serve. The other 56 percent came from areas served by other DOD hospitals. For example, about 100 patients were sent to Walter Reed from Region 13 (Georgia, South Carolina, and Florida) in each of fiscal years 1975 and 1976.

Officials from the Eisenhower hospital in Augusta, Georgia, said that under the DOD regionalization program a new laboratory, which is located in Region 13, will be providing catheterization service for DOD beneficiaries from that area. Thus, the workload that has been going to the Washington area will be handled at Eisenhower (see p. 31 ). While the Walter Reed commanding officer did not believe that his workload would decrease, if the DOD regionalization program is properly implemented and results in fewer patients being sent to Walter Reed from other DOD regions, we believe Walter Reed would likely experience reductions in its catheterization workload.

Malcolm Grow is planning to replace its catheterization laboratory notwithstanding

- a low use level (only 67 procedures performed in fiscal year 1975 and 98 in 1976),
- a distribution of that low workload among 4 physicians, and
- the absence of cardiovascular surgery capability.

We believe that in view of the low use of the existing Malcolm Grow laboratory it should not be replaced. We further believe that in the interest of improving patient care DOD should discontinue catheterization service at Malcolm Grow and transfer the existing workload to other Federal hospitals in the Washington area. All of these other hospitals will soon have new cardiac catheterization facilities with sufficient capability to absorb the Malcolm Grow workload and each can already perform cardiovascular surgery.

In addition, since the new Walter Reed hospital will have the capability of performing almost all the catheterizations that will have to be done in the Washington area, we believe that DOD and VA should jointly assess whether the planned replacement of catheterization laboratories at the Bethesda and the Washington VA hospitals is appropriate.

Dayton, Ohio

Cardiac catheterization capability in the Dayton area is provided by Wright-Patterson Air Force Base Medical Center, the Dayton VA hospital, and five civilian hospitals. The following table provides information on the Federal hospitals in the Dayton area and their cardiac catheterization capability.

Federal Hospital Basic Information

<u>Hospital</u>	<u>Number of beds</u>	<u>Dedicated labora-tory</u>	<u>Cardio-vascular surgery</u>	<u>Fiscal year 1976 workload</u>
Dayton VA	858	Yes	No	66
Wright-Patterson	320	No	No	60

Wright-Patterson Air Force Medical Center

The Wright-Patterson hospital is the regional medical center in DOD's Region 8. It serves patients from Ohio, Indiana, Illinois, Kentucky, and Missouri. Wright-Patterson has two cardiologists. Also, the chief of medicine is a cardiologist; however, he did not perform any catheterizations during fiscal years 1975 and 1976. Twelve cardiopulmonary technicians are assigned to the center, but only two are generally involved in providing support during cardiac

catheterization procedures. An additional three to five technicians are in an on-the-job training program.

The chief of the cardiology service said the center's equipment was not functioning properly and no longer provided the clarity and detail considered necessary to make a complete, positive diagnosis. As of October 1976, cardiac catheterizations involving coronary arteriograms were discontinued at Wright-Patterson and patients requiring coronary arteriograms were transferred to Wilford Hall Medical Center in Texas. At the time of our fieldwork, Wright-Patterson officials had requested about \$385,000 for new catheterization equipment for its existing laboratory.

Wright-Patterson officials said they met with officials from the Dayton VA hospital to discuss sharing medical services; however, they said they had not considered using the VA facility for catheterizing Wright-Patterson patients. In coordinating the proposed procurement of new catheterization equipment, Wright-Patterson officials restricted their efforts to other military facilities. The military facilities that responded to Wright-Patterson's inquiry generally said that even with the new equipment Wright Patterson would not duplicate their capability.

Wright-Patterson does not have cardiovascular surgery capability. Cardiologists at the hospital did not believe that it was necessary to have this capability in order to safely perform cardiac catheterization. Wright-Patterson has a formal agreement with the Miami Valley Hospital, which is less than 15 miles away, to provide cardiovascular surgery on an emergency basis if needed.

The Air Force is planning a \$50 million modernization project at Wright-Patterson to alleviate the current overcrowding of existing outpatient clinics, allow for an increase in referral workload under the DOD regionalization concept, and to accommodate additional residents and interns. Included in this project is a new dedicated cardiac catheterization laboratory.

#### Dayton VA hospital

The Dayton VA hospital is a large, multipurpose medical facility with 858 beds, a 300 bed nursing home, and an 840 bed domiciliary. It is located about 15 miles from the Wright-Patterson hospital. Cardiology personnel at the hospital described the catheterization equipment as reliable

and there were no plans to replace the catheterization laboratory or the equipment. Maintenance records showed that since August 1974, the equipment had only been nonoperational for 256 hours. In fiscal year 1976 VA performed 66 cardiac catheterizations. The chief cardiologist said the VA laboratory could perform 200 cardiac catheterizations a year if 2 additional technicians were available.

The Dayton VA catheterization laboratory is staffed by a cardiologist plus two physicians certified in internal medicine and trained in cardiology. Only two technicians are available for cardiac catheterization procedures. The chief of cardiology said that the laboratory's operation is constrained by its limited staff. With only one cardiopulmonary technician and one X-ray technician available, if either one is absent, cardiac catheterization cannot be performed.

Hospital cardiologists did not believe it was necessary to have cardiovascular surgery at the same hospital where cardiac catheterizations were performed. The VA hospital has a formal arrangement with the Good Samaritan hospital, less than 15 miles away, to provide cardiovascular surgery if it is needed on an emergency basis.

#### Civilian hospitals

We visited three of the five civilian hospitals which perform cardiac catheterization in the Dayton area--Miami Valley, Good Samaritan, and the Kettering Medical Center. All three also had cardiovascular surgery capability and performed a total of about 1,800 catheterizations in fiscal year 1976. Cardiologists at these three hospitals said they could perform substantially more catheterizations; however, additional staff would be needed at two locations. The additional capacity at the three civilian hospitals would be more than adequate to absorb the entire Federal cardiac catheterization workload in the Dayton area.

#### Opportunities for sharing in Dayton, Ohio

The Dayton area offers potential for sharing its Federal cardiac catheterization facilities. Wright-Patterson and the Dayton VA hospital use their catheterization laboratories at a level far below VA's guideline of 150 patients a year. The workload from these two hospitals together would approximate VA's guideline.

The catheterization equipment at the Wright-Patterson hospital is not operating sufficiently well to accommodate the full range of catheterization work and some patients are now being transferred to the Wilford Hall Medical Center in Texas. The chief cardiologist at Wright-Patterson agreed that patients could instead be transferred to the VA hospital for necessary catheterization. He further said it would be preferable to send patients to the Dayton VA hospital. Also, Wright-Patterson had several technicians available which could support the catheterization activity at the VA hospital.

Precedent already exists in Dayton for this type of a sharing arrangement. VA has renal dialysis equipment, and Wright-Patterson has a nephrologist--a kidney specialist. The physician works 2 days a week at the VA hospital and provides specialized treatment and consultation to VA patients.

Wright-Patterson pointed out that if catheterization were provided at the VA hospital some new equipment would still be needed for the radiology department and not all of the anticipated renovation cost could be saved. We believe, however, that joint use of the VA facility would eliminate the need for another dedicated cardiac catheterization laboratory in the planned new Wright-Patterson hospital.

We also believe that DOD and VA should explore providing cardiac catheterizations to Federal beneficiaries on a shared basis, using the catheterization laboratory at the VA hospital. Such an arrangement would raise the workload to a point where it would approximate the guidelines of the VA.

At present, neither Federal hospital has cardiovascular surgery capability. In the interest of providing optimal cardiac care, as recommended by the Intersociety Commission for Heart Disease Resources, VA and DOD should also explore whether their combined catheterization workloads would generate sufficient cardiovascular surgery cases to justify providing cardiovascular surgery on a shared basis.

#### Tucson, Arizona

Cardiac catheterization service in the Tucson area is provided by the VA hospital and three civilian hospitals-- St. Marys, the Tucson Medical Center, and the University of Arizona.

The Tucson VA hospital is a 370 bed facility located in the southwest portion of the city. The chief of the special procedures laboratory said that the hospital's catheterization equipment is about 6 years old and is operating satisfactorily. He indicated that a power source for the X-ray equipment will require replacement in fiscal year 1977 at an estimated cost of \$12,000 to \$15,000. He also said that the cardiac catheterization team consisted of one cardiologist, one radiologist, two cardiology technicians, one radiology technician, and one nurse.

The special procedures laboratory at the VA hospital is shared by the departments of cardiology, medicine, surgery, and radiology. Hospital officials believe they will eventually need a dedicated laboratory because of increasing demand on the existing laboratory. However, they estimated that 50 additional cardiac catheterizations per year could be performed with no additional facilities or staff. The chief of the laboratory believed that with a dedicated catheterization laboratory and an additional cardiologist the hospital's capability might be increased to 300 to 400 catheterizations per year compared to the 117 done in fiscal year 1976.

Providing cardiac catheterization to military patients

The Davis Monthan Air Force hospital is about 9 miles from the VA hospital. It has 75 beds and serves about 50,000 people. It does not have cardiac catheterization capability nor do three other military hospitals in Arizona. These other hospitals are located further from the VA hospital than Davis Monthan, as shown below.

<u>Hospital</u>	<u>Miles from Tucson</u>	<u>Estimated population served</u>
Bliss Army hospital	60	26,000
Williams Air Force hospital	90	39,000
Luke Air Force hospital	120	28,000

By reviewing medical transfer records and talking with hospital officials, we determined that at least 37 patients were transferred from Luke, Bliss, and Davis Monthan

hospitals in calendar year 1976 to receive cardiac catheterization in other military hospitals. Generally, Bliss transferred patients to William Beaumont Army hospital in Texas--approximately 275 miles from Tucson. Patients from the Davis Monthan and Luke Air Force hospitals were usually sent to Wilford Hall Medical Center--about 750 miles from Tucson. Some of these patients were transferred by the air evacuation system of the Air Force. Patients from Bliss Army hospital who were transported by the air evacuation system had to travel to Davis Monthan in Tucson to board the plane to be flown to William Beaumont. If agreements had been in effect between the military hospitals and the VA hospital, most of these patients could have received their catheterizations at the VA hospital in Tucson.

We also identified those patients at Davis Monthan who received nonavailability statements and were permitted to receive care for heart problems at civilian hospitals under the CHAMPUS program. Of the 44 cases in 1976, 12 appeared to have been for cardiac catheterizations. The hospital commander said that 12 cases were essentially correct.

VA hospital officials said they could handle the cardiac catheterization cases currently being transferred out of the Arizona area by the military hospitals as well as those being paid for under the CHAMPUS program, with the exception of pediatric cases. Plus, they said it would be advantageous to accept military patients, including dependents, because they would provide a more varied patient mix.

#### Cardiovascular surgery

Three civilian hospitals--Tucson Medical Center, St. Marys, and the University of Arizona--have cardiovascular surgery capability. However, the University of Arizona hospital, which is affiliated with the Tucson VA hospital, was without a cardiovascular surgeon from October 1975 to about May 1977. During that period VA patients requiring heart surgery who would have been sent to the University of Arizona hospital were sent to the Palo Alto VA hospital in California or the Tucson Medical Center. Neither of the Federal hospitals in Tucson had cardiovascular surgery capability until May 1977. The assistant hospital director said that starting in May 1977 the VA hospital had cardiovascular surgery capability through the use of the services of the cardiovascular surgeon at the University of Arizona.

Under the VA hospital's affiliation with the University of Arizona medical school, VA cardiologists serve as deans of the University medical school and spend part of their time teaching at the University. The chief of cardiology at the VA hospital also serves as chief of cardiology at the University. Therefore, the cardiology departments of both hospitals have a close working relationship.

#### Opportunities for sharing in Tucson, Arizona

Preliminary plans for a dedicated cardiac catheterization laboratory, estimated to cost \$400,000, are included in the Tucson VA health care plan for fiscal years 1978-82. According to the chief of the special procedures laboratory, with the planned new dedicated laboratory and one additional cardiologist the VA hospital's capability would increase to 300 to 400 catheterizations per year. This, together with its recently acquired cardiovascular surgery capability, would appear to place it in an excellent position to provide cardiac catheterization to Federal beneficiaries in Arizona.

The addition of the military beneficiaries who now receive cardiac catheterization at military hospitals outside Arizona each year and those patients who obtain catheterization under CHAMPUS would enable the VA hospital to more efficiently utilize its staff and equipment and raise the number of procedures performed annually to VA's recommended workload standard for proficiency and patient safety.

#### Augusta, Georgia

Cardiac catheterization capability in the Augusta area is provided by two Federal hospitals--the Augusta VA hospital and the Dwight D. Eisenhower Medical Center at Fort Gordon--and two civilian facilities--the University hospital and Eugene Talmadge Memorial hospital of the Medical College of Georgia. The following tables provide basic information on the Federal hospitals in the Augusta area and their cardiac catheterization capability.

### Federal Hospital Basic Information

<u>Hospital</u>	<u>Number of beds</u>	<u>Dedicated laboratory</u>	<u>Cardio-vascular surgery</u>	<u>Fiscal year 1976 workload</u>
Augusta VA	300	No	Yes	152
Eisenhower	700	Yes	No	a/70

a/The Eisenhower facility was opened in May 1976. These procedures were performed from May through November 1976.

#### Augusta VA hospital

The Augusta VA hospital is one of five VA hospitals in the VA's Medical District number 9, which includes parts of Georgia, South Carolina, and North Carolina. It serves about 72,921 people in 24 counties in Georgia and South Carolina.

The team performing catheterizations at the VA hospital generally includes a cardiologist, three technicians, and one student from the University of Georgia medical school. About 7 percent of the hospital's catheterization patients during fiscal years 1975 and 1976 were referrals from the Eisenhower hospital before its catheterization laboratory was opened in May 1976.

The Augusta VA hospital has cardiovascular surgery capability. The hospital chief of staff said that the catheterization laboratory is an integral part of the cardiology department, which in turn is an integral part of the cardiovascular surgical service. He said that the cardiac catheterization and cardiovascular surgery capabilities go together and to have one without the other would hinder efficiency. However, the chief of the catheterization laboratory said that the VA hospital had not encountered a complication which required cardiovascular surgery while performing a catheterization.

VA hospital officials expect to have a new dedicated laboratory when they occupy their new hospital which is to be completed in 1979. The capacity of the new laboratory is estimated by hospital officials to be about 1,000 procedures per year. Equipment costs for it are estimated at over \$400,000.

Dwight D. Eisenhower  
Army Medical Center

Eisenhower is a referral hospital for DOD's Region 13, which consists of South Carolina, Georgia, and a major portion of Florida. There are also five Navy and eight Air Force hospitals in the region, but none of them have cardiac catheterization capability.

Until May 1976 no cardiac catheterization capability existed at Fort Gordon, where the Eisenhower hospital is located. Construction costs for the catheterization laboratory at Eisenhower were \$85,000, and the equipment costs were \$418,000.

The hospital comptroller said that justification specifically for the catheterization laboratory was probably not prepared when planning the new hospital and that the laboratory was probably included in the plans for the new hospital because cardiac catheterization was believed to be an essential service for a regional medical center. Officials at the VA and Eisenhower hospitals said that no attempt was made at the local level to coordinate the establishment of the Eisenhower laboratory or the planned new VA laboratory.

Although not formally established, the staffing pattern of the catheterization team at Eisenhower usually consists of one or two cardiologists and three technicians. Eisenhower officials estimated that they will perform about 250 procedures during calendar year 1977.

They stated that transfers from Region 13 to other hospitals for catheterization will no longer be necessary. Further, they estimate that the laboratory's capability could increase to 400 to 500 catheterizations per year if the necessary staffing were obtained.

The Eisenhower hospital does not have cardiovascular surgery capability. The chief of medicine said that it would be helpful but did not believe that the absence of such capability increased patient risk. He believed that the thoracic and vascular surgeons on the Eisenhower staff could handle any complications resulting from a catheterization procedure. He said there had been only one complication since May 1976 and the patient was stabilized by the catheterization team.

### Civilian hospitals

University and Talmadge hospitals performed about 400 cardiac catheterizations each in 1976. The administrator at University hospital stated that the hospital's laboratory is operating near capacity and that there are no plans for expansion before 1980.

Talmadge officials said they have two catheterization laboratories and that their total capacity is about 500 catheterizations per year. They plan to enter into an agreement to share cardiac catheterization laboratories with the VA hospital when VA occupies its planned new hospital in 1979. The nature of the sharing arrangement had not been finalized at the time of our fieldwork, however, it could result in the sharing of each others facilities.

Talmadge hospital plans to modernize one of its laboratories in about 2 years. The amount of funds it will commit to this project will depend on the type of sharing arrangement it makes with the new VA hospital.

Both Talmadge and University hospitals have cardiovascular surgery capability.

### Opportunities for sharing in Augusta, Georgia

If the VA hospital proceeds with current plans to replace its existing cardiac catheterization laboratory, by 1979 there will be two Federal hospitals within 5 miles of one another with fully dedicated laboratories having a combined capacity of about 1,500 procedures per year. The combined workload of the VA and the Eisenhower hospitals for calendar year 1977 is estimated at between 450 and 550 procedures. Thus, unless the need for cardiac catheterization increases dramatically in the Augusta area in the near future, the two laboratories may operate at far less than capacity even though some of the VA hospital's capability may be utilized by Talmadge under their proposed sharing arrangement.

One way of making better use of existing capability in the Augusta area would be to explore the feasibility of providing both cardiac catheterization and cardiovascular surgery to all Federal beneficiaries in the newly constructed Eisenhower facility. This move could lead toward the optimal use of a new and large dedicated catheterization laboratory

with modern equipment. Such an arrangement would be similar to the one which exists between DOD and VA in the Dayton area for the care of patients with kidney disease. It would also eliminate the need for procuring expensive catheterization equipment at the new Augusta VA hospital. Further, it would provide an opportunity to raise the number of catheterizations performed and establish a center capable of providing both catheterization and cardiovascular surgery to Federal beneficiaries.

## CHAPTER 3

### CONCLUSIONS AND RECOMMENDATIONS

#### CONCLUSIONS

Several medical professional organizations and VA have established guidelines for cardiac catheterization laboratories. The guidelines purposes are to maintain adequate levels of proficiency and to minimize patient risk. However, neither DOD nor PHS have such guidelines.

There was a large variance in the number of cardiac catheterizations being performed in DOD and VA cardiac catheterization laboratories. During fiscal year 1976 catheterizations performed at the hospitals included in our review ranged from 574 at Walter Reed in Washington, D.C., to 60 procedures at Wright-Patterson in Dayton, Ohio. Also, there was no correlation between the number of catheterizations performed and the number of physicians performing them. In addition, physicians at the hospitals we visited had differing views of the number of catheterizations that should be performed to maintain proficiency.

We believe uniform guidelines for the planning and use of Federal cardiac catheterization laboratories should be developed. Also, the guidelines would be more meaningful and provide greater assurance of patient safety if they associated the number of procedures to be performed with the number of physicians that should be performing them and addressed any variances considered appropriate. Like some of the guidelines of the professional associations, the uniform Federal guidelines might also address required support staff and the need for cardiovascular surgery capability. Such uniform guidelines would make it easier for DOD, VA, and PHS to provide this diagnostic service on a shared basis.

Once the above Federal guidelines have been established, DOD, VA, and PHS should jointly analyze how cardiac catheterization is provided at their laboratories with a view toward adjusting it to be in harmony with those guidelines. Such adjustment should include, where feasible, providing cardiac catheterization on a joint or shared basis in a single Federal facility. At those locations where guidelines cannot be met, consideration should be given to closing the cardiac catheterization laboratories and obtaining the service from nearby civilian hospitals.

In each of four geographic areas we visited, there were opportunities to provide cardiac catheterization on a shared basis which could increase patient safety and reduce costs to the Government. The sharing opportunities could be accomplished within the framework of present laws governing DOD and VA operations. However, some administrative barriers such as the absence of a standard method of reimbursement for sharing hospital services, stand in the way of using facilities on a shared basis. We are analyzing these barriers as part of another review and will suggest methods to eliminate or minimize them as a result of that effort. Nevertheless, because these are administrative barriers there is no reason why DOD, PHS, and VA cannot begin to plan in terms of treating "Federal beneficiaries." This approach--especially in the area of cardiac catheterization--would not only seem to foster better patient care but should result in reduced Federal costs.

### RECOMMENDATIONS

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

- Jointly develop uniform Federal guidelines for the planning and use of Federal cardiac catheterization laboratories which associate the number of catheterization procedures to be performed with the number of physicians that should perform them.
- Consider what variances from those guidelines might be appropriate.
- Jointly analyze the use levels at cardiac catheterization laboratories and adjust the manner in which this diagnostic service is provided so that it is in harmony with the established Federal guidelines and, where feasible, provide cardiac catheterization on a joint or shared basis in a single Federal facility.
- Discontinue providing cardiac catheterization in Federal facilities in geographic areas where the Federal guidelines cannot be met and obtain this service from nearby civilian hospitals.

We also recommend that the Secretary of Defense and the Administrator of Veterans Affairs take the following actions:

- In the Dayton, Ohio, area establish an agreement for providing cardiac catheterization on a shared basis

using the Dayton VA hospital--provided combined use levels are in harmony with the Federal guidelines when they are established. Explore whether cardiovascular surgery can be justified on the basis of the combined workloads of Wright-Patterson and the Dayton VA hospital.

- In the Tucson, Arizona, area establish an agreement for providing cardiac catheterization to Federal beneficiaries on a shared basis using the VA hospital.
- In the Augusta, Georgia, area explore the possibility of consolidating both cardiac catheterization and cardiovascular surgery capabilities in the new Dwight D. Eisenhower facility.
- In the Washington, D.C., area assess whether the planned replacement of the catheterization laboratories at the Bethesda Naval hospital and the VA hospital is appropriate in view of the expected capability at Walter Reed.

Further, we recommend that the Secretary of Defense close the cardiac catheterization laboratory at the Malcolm Grow hospital.

Finally, as part of his role in implementing and coordinating Government activities, we recommend that the Director, Office of Management and Budget (OMB):

- Oversee the efforts of DOD, HEW, and VA in developing uniform Federal guidelines for the planning and use of Federal cardiac catheterization laboratories to insure it is accomplished in an appropriate and timely manner.
- Insure that DOD, HEW, and VA provide cardiac catheterization on a shared basis when it will improve patient care and result in reduced costs to the Government.

#### AGENCY COMMENTS AND OUR EVALUATION

In commenting on our report DOD, VA, and HEW agreed that they should jointly develop uniform Federal guidelines for the planning and use of Federal cardiac catheterization laboratories.

VA suggested that because the number of catheterization procedures may vary per patient, it might be better, when developing a workload guideline, to relate the number of physicians per laboratory to the number of patients catheterized. The Intersociety Commission for Heart Disease Resources suggests that when several procedures, such as right and left heart catheterizations and coronary arteriograms, are performed on a patient during a single examination episode, they would be considered one procedure under their guidelines. Like the Intersociety Commission, we view the term procedure as including all catheterization procedures and studies performed on a patient during a single examination episode. Also, we believe that the term procedure, defined as above, is a more appropriate workload measure than patients because, in some instances, patients have more than one catheterization episode. Therefore, just counting patients could understate a laboratory's workload.

OMB also agreed with the need for uniform Federal guidelines and indicated it would review what the agencies develop against standards published by the non-Federal professional medical community. OMB said it could enforce the application of guidelines through the budget process. Using the traditional budget process to oversee the application of only the cardiac catheterization guidelines may be appropriate. However, as the concept of sharing becomes more widely accepted and extends to other specialized services and medical services in general, OMB may be able to better stimulate sharing and provide more effective Federal agency coordination through a group which is dedicated solely to that activity.

In response to our recommendation that the agencies consider appropriate variances from the uniform guidelines, DOD and VA raised a number of considerations such as geographic factors, maintaining viable training programs, and agency mission requirements. We believe that these and other considerations should be fully evaluated by the group developing the uniform Federal guidelines so that the final guidelines will be comprehensive and acceptable to all involved agencies and will provide a sound basis for the sharing of Federal cardiac catheterization services.

DOD concurred in principle that the use levels at all Federal catheterization laboratories should be jointly analyzed after the uniform guidelines are developed. DOD emphasized, however, that any adjustments concerning how service is provided must consider the appropriate variances. VA said that it was currently studying the area of unnecessary duplication and that it may be possible from a treatment

standpoint to share various Federal cardiac catheterization laboratories. We believe that an evaluation of all cardiac catheterization laboratories against the uniform Federal guidelines, once they are developed, is essential to assure patient safety and to identify those locations where catheterization could be provided more effectively and economically through sharing.

Neither DOD or VA agreed that closing a laboratory was the only appropriate corrective action when guidelines cannot be met. DOD argued that where closure is a serious consideration, specific efforts to raise workloads, such as changing patient referral patterns, should be considered. VA argued that guidelines are not rigid standards and some flexibility must be maintained. We believe that the uniform Federal guidelines must have some flexibility to accommodate workload fluctuations caused by personnel shortages and equipment failure. However, the usefulness of the guidelines will be greatly diminished unless they clearly identify when continued operation of the cardiac catheterization laboratory is no longer the best course of action.

#### Washington, D.C.

DOD agreed with our recommendation to close the Malcolm Grow catheterization laboratory; however, it disagreed with the need to reassess the planned replacement laboratory at Bethesda. DOD said the Bethesda laboratory was required to support patient care and training in cardiothoracic surgery, cardiology, radiology, pediatrics, and internal medicine, and indicated that the combined workloads of Malcolm Grow, Bethesda, and Walter Reed could exceed Walter Reed capability and preclude accommodating the Washington VA hospital catheterization workload. DOD agreed in principle with the transfer of VA workload to Walter Reed. VA said that workload at its Washington hospital dictated replacing its cardiac catheterization laboratory.

We appreciate DOD's and VA's position regarding Bethesda and the Washington VA hospitals. Both are teaching facilities with residency programs in cardiology and both have annual workloads of about 250 procedures. Nevertheless, the fact still remains that the new Walter Reed hospital will more than likely have the capability to handle almost all of the Federal cardiac catheterization workload in the Washington area. We believe that, as a minimum, DOD and VA should seriously consider whether cardiac catheterization laboratories are needed at both Bethesda and the Washington VA hospitals when they jointly analyze these laboratories subsequent to the development of the Federal guidelines.

### Tucson, Arizona

VA agreed that the Tucson VA hospital had the capacity to provide catheterization services to DOD patients. DOD concurred in principle to sharing in this area; however, it did not believe sharing would increase the workload as much as our report indicated because the VA hospital cannot accommodate pediatric patients. Also, DOD believed that patients needing cardiothoracic surgery should be referred to larger military hospitals which had that capability. DOD further stated that the effect which sharing in Tucson would have on training programs at William Beaumont Army Medical Center--the hospital where many military patients from Arizona are now referred--must be considered. DOD suggested further study of the opportunity to share the Tucson VA laboratory.

We believe that this opportunity for sharing should be seriously studied. The Tucson VA hospital is capable of accepting additional cardiac catheterization patients and has open heart surgery capability through an agreement with the University of Arizona Medical School. Also, it is very unlikely that the William Beaumont training programs would be adversely affected because patients from Arizona represent only about 10 percent of its cardiac catheterization workload.

### Augusta, Georgia

DOD agreed in principle with our recommendation to explore consolidating both cardiac catheterization and cardiovascular surgery capabilities in the new Eisenhower medical center. VA said initial discussions with DOD indicated that the question could not be resolved in the immediate future. VA said that a site visit has been arranged in late 1977 to discuss further sharing of the Eisenhower facility. VA said the equipment at the Augusta VA hospital is being upgraded only to maintain it in working order.

### Dayton, Ohio

VA agreed and DOD disagreed with our recommendation that the Dayton VA hospital provide cardiac catheterization to both DOD and VA patients. DOD proposed that VA join in using the Wright-Patterson facility. DOD said that its proposed new regionalization plan would make Wright-Patterson a referral center for the mid-western States. Its annual workload would be increased to about 250 catheterizations by closing catheterization laboratories at Great Lakes Naval Regional Medical Center and at Scott Air Force Medical Center

and transferring catheterization patients to Wright-Patterson. DOD said that equipment would be upgraded and staffing increased to handle this workload.

Our recommended approach may not be the only way to achieve sharing of Federal cardiac catheterization service in the Dayton area. DOD's proposal has the advantage of significantly raising the use levels at Wright-Patterson and providing a catheterization workload, which in all likelihood, would be large enough to support an open heart surgery program. However, its disadvantage is that it contemplates upgrading the catheterization equipment at Wright-Patterson when good equipment already exists at the Dayton VA Hospital. In studying the reasonableness of this alternative, consideration must also be given to the possibility of sharing cardiac catheterization services with the VA hospitals near the Great Lakes and Scott facilities.

DOD and VA said that sharing Federal cardiac catheterization services is possible, but many obstacles have to be dealt with such as assuring equitable reimbursement, working out joint staffing problems, and removing any legal constraints to create capacity for purposes of sharing. We recognize that obstacles inhibit sharing among Federal hospitals and are exploring ways that they can be overcome or minimized.

We believe that rising costs of health care and the need to provide the best quality of care dictates that action begin now to eliminate unnecessary duplication of costly medical services.

In that context, we commend the efforts DOD, VA, and HEW have taken since June 1977 to (1) establish an overall organization entity to consider sharing issues and (2) establish interagency working groups to develop uniform Federal guidelines for cardiac catheterization laboratories and study sharing of computed tomography scanner services. We believe that if these efforts continue they could provide the necessary groundwork to build an effective sharing program within the Federal hospital system.

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**Congress of the United States** dms  
**House of Representatives**  
**Committee on Appropriations**  
 Washington, D.C. 20515

November 17, 1976

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RECEIVED

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

Dear Mr. Staats:

The Committee has become increasingly concerned over the rapidly rising cost of health care facilities and equipment. Last year, because of this concern, we asked your office to review the planning for several military hospitals to be built as part of the Department of Defense's medical facility modernization program. The reports and other information you supplied to the Committee were very helpful to us in providing guidance to the Department of Defense on how it should plan future health care facilities. The area of sharing medical facilities that was raised in your report on the San Diego Naval Hospital remains of particular interest to the Committee.

The Committee feels that the need to provide the best quality medical care at a reasonable cost mandates that the Congress be aware of whether sharing expensive and highly specialized equipment among all Federal hospitals offers an opportunity to improve medical care and save money for the Government as a whole. Therefore, we would like your office to look into what steps Department of Defense, the Veterans Administration, and Department of Health, Education, and Welfare have taken to share cardiac catheterization capability, because it is an established specialized service, and computerized tomography capability, because it is an emerging specialized service. Both of these involve the acquisition of very expensive, highly specialized equipment that seems to offer high potential for sharing.

More specifically in the cardiac catheterization area, we would like you to look into:

Honorable Elmer B. Staats  
November 17, 1976  
Page 2

a. The amount of coordination that has taken place among Department of Defense, the Veterans Administration, and the Department of Health, Education, and Welfare in planning and locating laboratories.

b. The utilization of existing laboratories as compared to the utilization levels recommended by various medical professional organizations.

c. What opportunities exist to improve the quality of care and possibly reduce costs through greater sharing of cardiac catheterization facilities.

With regard to the computerized tomography scanners, we would like you to look into:

a. The reasonableness of the criteria used by Department of Defense, the Veterans Administration, and the Department of Health, Education, and Welfare in justifying the need for scanners.

b. The degree of coordination between Department of Defense, the Veterans Administration, and the Department of Health, Education, and Welfare in planning and locating scanners.

c. What opportunities exist to provide computerized tomography service in specific geographic areas on a shared basis.

Because of our interest in assuring that maximum use is made of existing hospital assets in both the Federal and civilian sectors, we would appreciate your identifying what cardiac catheterization and computerized tomography capability exists in civilian hospitals in the geographic areas you select for review. We feel that it is important for the Committee to be aware of this information since, as indicated in your report on the San Diego Naval Hospital, a substantial portion of the patients eligible for care in Federal hospitals are also eligible for care in civilian hospitals under various programs funded with Federal money.

We would appreciate having the information you develop for use during our medical hearings, which are now scheduled for February 1977. However, because computerized tomography is an emerging service, and the opportunity exists to ensure that the Federal Government proceeds with the acquisition of these facilities in a coordinated fashion, we would like a separate report on that portion of your review as soon as possible.

The Committee staff is available to discuss this request and other interests in more detail.

Honorable Elmer B. Staats  
November 17, 1976  
Page 3

Thank you for your assistance and cooperation.

Sincerely,

*Elmer Staats*  
Chairman

*HRD  
12/2/76*

*12-1-76*

*Copy retained  
in HRD-38*

HRD to develop acknowledgement for  
CG signature

Forward for Divisional Control to: <i>HRD</i>	
Advance Copy to:	
<input type="checkbox"/> For action	<input type="checkbox"/> For info
SPECIAL INSTRUCTIONS <i>HRD to develop ack. for CG signature &amp; Blair</i>	
<i>11-30-76</i>	

EXECUTIVE OFFICE OF THE PRESIDENT  
OFFICE OF MANAGEMENT AND BUDGET  
WASHINGTON, D.C. 20503

JUL 18 1977

Mr. Gregory J. Ahart  
Director, Human Resources Division  
United States General  
Accounting Office  
Washington, D.C. 20546

Dear Mr. Ahart:

I am pleased to respond to your request for comments by the Office of Management and Budget on the General Accounting Office's draft report to the Congress, "Sharing Cardiac Catheterization, A Way to Improve Patient Care and Reduce Costs." We have reviewed your report, and wish to address comments to two areas.

In regard to the recommendations which the report makes about opportunities for sharing of cardiac catheterization resources in Washington, D.C.; Dayton, Ohio; Tucson, Arizona; and Augusta, Georgia; we are reviewing these recommendations with the agencies involved and will continue to work with them to resolve problems. These agencies are preparing comments on the suggestions in your report, and are discussing the opportunities, procedures and problems of sharing these and other special medical facilities with each other.

Your report also recommends that the Office of Management and Budget oversee the efforts of the Department of Defense; the Department of Health, Education, and Welfare; and the Veterans Administration to develop uniform Federal guidelines for the planning and use of cardiac catheterization laboratories of these agencies.

We are in full accord with the need for the Federal agencies providing hospital-based medical care to approach jointly the development and use of cardiac catheterization resources. The involved agencies have begun a joint undertaking to develop common guidelines for cardiac catheterization laboratories. We shall critically review these guidelines, including comparison with standards developed by the non-federal professional medical community. However, we believe that OMB can most effectively enforce their application through the budget process. Because the agencies already

have initiated guideline development, and our traditional role is the ideal form of enforcement, we do not feel that the more formal oversight and coordination effort which you recommend is needed.

Further, this Office has been working with the respective agencies to improve the planning and coordination of these and other health resources. The Department of Defense, with our support, now requires its military components to provide evidence of coordination with other Federal agencies before major medical construction or procurement dollars are approved. OMB Circular A-95, recently revised, now requires local and other clearances for direct Federal medical construction or the purchase of major capital equipment, and shows good potential for improving special medical program planning.

Finally, I have been advised that members of my reorganization staff have contacted your office regarding an opportunity to discuss the Federal health care delivery systems. We will welcome your ideas.

Sincerely,



James T. McIntyre, Jr.  
Deputy Director



DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE  
OFFICE OF THE SECRETARY  
WASHINGTON, D.C. 20201

AUG 18 1977

Mr. Gregory J. Ahart  
Director, Human Resources  
Division  
United States General  
Accounting Office  
Washington, D.C. 20548

Dear Mr. Ahart:

The Secretary asked that I respond to your request for our comments on your draft report entitled, "Sharing Federal Cardiac Catheterization Capability: A Way to Improve Patient Care and Reduce Costs." The enclosed comments represent the tentative position of the Department and are subject to reevaluation when the final version of this report is received.

We appreciate the opportunity to comment on this draft report before its publication.

Sincerely yours,

Thomas D. Morris  
Inspector General

Enclosure

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE COMMENTS ON GAO DRAFT REPORT ENTITLED; "SHARING FEDERAL CARDIAC CATHETERIZATION CAPABILITY: A WAY TO IMPROVE PATIENT CARE AND REDUCE COSTS"

GENERAL COMMENTS

The Department has reviewed the GAO draft report and found it to be generally an accurate representation of the problems and the needs of cardiac catheterization laboratories. We do not take exception to any part of the report.

GAO RECOMMENDATION.

We recommend that the Secretaries of Defense, and Health, Education and Welfare, and the Administrator of Veterans Affairs

- Jointly develop uniform Federal guidelines for the planning and use of Federal cardiac catheterization laboratories which associate the number of catheterization procedures to be performed with the number of physicians that should be performing them.
- Consider what variances from those guidelines might be appropriate, for example, due to the existence of a residency program in cardiology.
- Jointly analyze the use levels at their respective cardiac catheterization laboratories and adjust the manner in which this diagnostic service is provided so that it is in harmony with the established Federal guidelines, and, where feasible, provide cardiac catheterization on a joint or shared basis in a single Federal facility.
- Discontinue providing cardiac catheterization in Federal facilities in geographic areas where the Federal guidelines cannot be met either alone or on a shared basis with another Federal facility, and obtain this service from nearby civilian hospitals.

DEPARTMENT COMMENT

We concur. The Public Health Service (PHS), will work with the Department of Defense (DOD) and the Veterans Administration (VA), to develop standards and agreements for cardiac catheterization laboratories. The Office of Management and Budget (OMB) has contacted the Bureau of Medical Services (BMS), Health Services Administration (HSA), concerning this effort and meetings are being established with the VA and DOD. The Director, Division of Hospitals and Clinics, BMS, will represent the PHS hospitals and clinics at those discussions.



ASSISTANT SECRETARY OF DEFENSE  
WASHINGTON, D. C. 20301

7 SEP 1977

## HEALTH AFFAIRS

Mr. Gregory I. Ahart  
Director, Human Resources Division  
General Accounting Office  
Washington, D. C. 20548

Dear Mr. Ahart:

This is in response to your letter of June 14, 1977 to the Secretary of Defense requesting comments on a draft report entitled "Sharing Federal Cardiac Catheterization Capability: A Way to Improve Patient Care and Reduce Costs" (OSD Case 4645).

The Department of Defense (DoD) concurs in the general concepts of developing guidelines for Federal cardiac catheterization laboratories and of sharing their capabilities. DoD wishes to respond to the specific draft recommendations on pp 54-56 of the report as follows:

1. Joint development of uniform Federal guidelines for planning and use of Federal cardiac catheterization laboratories: Concur.
2. Consideration of variances from guidelines: Concur. Geographic factors, training program support, cost and accessibility of alternate sources of catheterization, and mobilization requirements are among those factors which must be considered by DoD. Military medical training in cardiology, internal medicine, pediatrics, radiology, and thoracic surgery as well as recruitment and retention of specialists in these areas are all affected by presence or absence of catheterization laboratories. Patient acceptance of referral to laboratories of other agencies must be considered. Economic considerations may frequently be secondary to other factors.
3. Joint analysis of use levels at the various respective laboratories with adjustment in accordance with guidelines and provision of joint or shared facilities: Concur in principle. Adjustment must take into account appropriate variances and DoD requirements. In many cases where sharing of services is planned, joint staffing will be required to handle the combined workload. Joint staffing poses a multitude of legal, administrative, and professional problems, all of which must be considered.

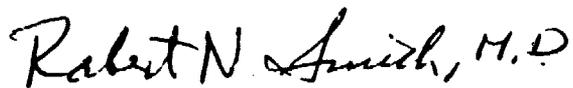
4. Discontinuati... of facilities where Federal guidelines cannot be met: Concur in principle, pending further study of specific situations in accordance with appropriate variances and DoD requirements. Where discontinuation is a serious consideration, specific efforts to raise the workload by changing referral patterns should be considered as a means of preserving a laboratory which represents a convenience to patients, a professional opportunity for the staff, and most economical utilization of existing resources.
5. Sharing in Dayton, Ohio. Under a proposed new DoD regionalization plan, Wright-Patterson US Air Force Medical Center is to be the Military Health Service System referral center for Region 6 (formerly Region 8). DoD contemplates closing catheterization laboratories at Great Lakes Naval Regional Medical Center and Scott US Air Force Medical Center with transfer of catheterization patients to Wright-Patterson. The total annual workload could be approximately 250 cases per year. Equipment would be upgraded and staffing increased to handle this workload. The catheterization laboratory would support patient care as well as residency training at Wright-Patterson. For these reasons, DoD nonconcur with joint use of the Dayton VA laboratory and proposes instead that VA join in utilization of the Wright-Patterson facility. This could bring the total workload to over 300 per year. DoD concurs with further study of the possible need for a cardiovascular surgery program based on the total combined patient populations.
6. Sharing in Tucson, Arizona. DoD concurs in principle with the proposed sharing of the Tucson VA catheterization laboratory. However, the increase in workload at the VA hospital would not be as great as anticipated by GAO for several reasons. Pediatric patients cannot be accommodated by VA; and patients from military hospitals who are expected to need cardiothoracic surgery should still be referred to larger military hospitals where the surgical capability exists. Under existing law, dependent beneficiaries requiring cardiac catheterization would not be eligible for VA service; if they were, only Davis-Monthan Air Force Base is within the 40 mile limit beyond which beneficiaries have the option of using civilian health services. The effect which sharing in Tucson would have on training programs at William Beaumont Army Medical Center must be considered since the output of those programs is essential to continued military medical support of combat forces. DoD recommends further study of the opportunity to share the Tucson VA laboratory.
7. Sharing in Augusta, Georgia. DoD concurs in principle with the recommendation for the Augusta VA hospital to share in utilization of the Eisenhower Army Medical Center laboratory and with further study of the

feasibility of providing cardiovascular surgery at Eisenhower for all Federal beneficiaries in the Augusta area.

8. Sharing in Washington, D. C. Concur in closing the laboratory at Malcolm Grow US Air Force Medical Center. Non-concur in the need to assess the requirement to replace the catheterization laboratory at Bethesda National Naval Medical Center. The Bethesda laboratory is required to support cardiothoracic surgery as well as training in the areas of cardiothoracic surgery, cardiology, radiology, pediatrics, and internal medicine. The combined workloads of Malcolm Grow (120), Bethesda (316), and Walter Reed (646) (1975-1976 averages) could exceed the capability of the new Walter Reed Laboratory and would preclude accommodating the Washington VA catheterization workload. DoD concurs in the statement by the Commander of Walter Reed (page 32 of draft report) that demand for catheterization will be increasing, particularly as surgical capability to correct coronary artery disease and other defects improves and more patients are selected for surgery. DoD concurs in further study of the Washington VA catheterization laboratory and agrees in principle with a transfer of their workload to Walter Reed.

DoD recommends that the issues of Federal guidelines and inter-agency sharing be pursued by inter-agency working groups and initial steps have been taken to form these groups.

Sincerely,

A handwritten signature in black ink that reads "Robert N. Smith, M.D." The signature is written in a cursive, slightly slanted style.

Robert N. Smith, M. D.



VETERANS ADMINISTRATION  
OFFICE OF THE ADMINISTRATOR OF VETERANS AFFAIRS  
WASHINGTON, D.C. 20420  
September 20, 1977

Mr. Gregory J. Ahart  
Director, Human Resources Division  
U. S. General Accounting Office  
441 G Street, NW.  
Washington, DC 20548

Dear Mr. Ahart:

We have reviewed the June 14, 1977, draft report, "Sharing Federal Cardiac Catheterization Capability: A Way to Improve Patient Care and Reduce Costs," numbered B-133044/B-164031(2), and concur with its observations and recommendations with the following exceptions and comments.

It may be feasible to develop common federal guidelines for the planning and use of cardiac catheterization laboratories (CCL) in which the number of physicians performing procedures is related to the number of procedures. However, since the number of procedures varies considerably per patient, it may be more appropriate to relate the number of physicians per laboratory to the number of patients subjected to catheterization. It is also possible that differences in geographic distribution, mission, and populations served may make common guidelines difficult to achieve.

Catheterization is but one function of a cardiac evaluation laboratory which performs best when it is proximate to the day-to-day location of patients being served. Teaching of cardiology residents is not possible apart from laboratory experience in evaluations which include catheterizations, routine and special electrocardiographic procedures, ultrasonic studies and the like. At those CCLs having a resident physician training program, we would require that a senior staff cardiologist be in attendance and fully scrubbed during all catheterizations in which residents are being trained. Accordingly, the standard would continue to relate to the assigned staff rather than the residents.

We are currently investigating the demographic relationships between the Veterans Administration (VA) and the other federal catheterization programs to ensure that unnecessary duplications do not occur. In several areas it may be possible from a treatment standpoint for various federal CCLs to share facilities.

We do not concur that closure is the only appropriate corrective action to be taken when a laboratory or any other service does not meet "utilization/productivity" guidelines. The guidelines are not rigid standards

Mr. Gregory J. Ahart  
Director, Human Resources  
U. S. General Accounting Office

and patient care is ill served if they are so used. Guidelines are judgmental and flexible signposts for management to aid in the identification of possibly out-of-line-situations. Management must evaluate such patient care requirements before determining the optimum corrective action for a given situation at a given time. For example, falling below the guideline may be transitional and expected in a developing laboratory, temporarily due to equipment failure or personnel loss, or correctable through consolidation (closing the laboratory under examination or one that is nearby). Sharing with non-federal or other federal institutions is another possibly appropriate solution, depending upon the specific circumstances in each case.

From a workload standpoint, the CCLs at the VA Hospitals in Dayton and Tucson should be able to provide services for the Department of Defense (DOD). With regard to the VA Hospital at Augusta, workload has declined in Fiscal Year 1977 because of breakdown in antiquated equipment. Initial discussions with DOD to explore the possibility of providing CCL service for VAH Augusta do not indicate that the question can be resolved in the immediate future. We are upgrading our equipment at Augusta only to maintain it in working order. A site visit is scheduled this fall to discuss further the possibilities of sharing cardiac catheterization resources with DOD. Workload at the VA Hospital in Washington, DC, dictates that we must proceed with the CCL replacement. We will continue to work with DOD concerning sharing of resources where it will improve patient care and facilitate better use of resources.

We are exploring the establishment of an inter-agency committee to develop common guidelines for cardiac catheterization standardization. A preliminary meeting has been planned with representatives of the Departments of Defense and Health, Education and Welfare, and we have already exchanged data with representatives of the DOD in order to facilitate negotiations.

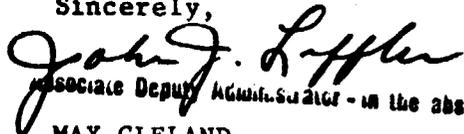
While we agree that, from a workload viewpoint, underutilized capabilities of the VA cardiac catheterization laboratories may be shared with other federal agencies, the matter of reimbursement requires attention. Section 5053(b) of title 38, United States Code, states: "Arrangements entered into under this section shall provide for reciprocal reimbursement based on a charge which covers the full cost of services rendered, supplies used, and including normal depreciation and amortization costs of equipment."

Mr. Gregory J. Ahart  
Director, Human Resources Division  
U. S. General Accounting Office

It should also be noted that such sharing is only applicable where there exists excess capability. Existing legislation does not permit the VA to create capacity for the purpose of sharing as GAO implies.

We appreciate the opportunity to review and comment on this report.

Sincerely,

  
Associate Deputy Administrator - in the absence of  
MAX CLELAND  
Administrator

CARDIAC CATHETERIZATION IN  
PUBLIC HEALTH SERVICE HOSPITALS

Three of the eight PHS hospitals have cardiac catheterization laboratories. Through discussions with a PHS representative, we obtained fiscal year 1975 and 1976 cardiac catheterization data on these three hospitals. The following table shows the reported catheterization workloads.

<u>Reported cardiac</u> <u>catheterization workload</u>		
<u>Hospital</u>	<u>Fiscal year 1975</u>	<u>Fiscal Year 1976</u>
Baltimore	a/73	153
San Francisco	295	284
Staten Island	255	240

a/Closed January to May 1975.

Under an affiliation agreement, the Seattle PHS hospital catheterizes its patients at the University of Washington Medical School using PHS doctors. Doctors and technicians from the Seattle PHS hospital performed 77 catheterizations in fiscal year 1975 and 71 in fiscal year 1976 under the affiliation agreement. The other four PHS hospitals referred their patients either to (1) PHS hospitals offering cardiac catheterization, (2) NIH, (3) a VA hospital, (4) a military hospital, or (5) civilian hospitals.

According to a PHS official, PHS has no guidelines on the number of cardiac catheterizations that should be performed to maintain proficiency.

PRINCIPAL OFFICIALS RESPONSIBLE  
FOR ADMINISTERING ACTIVITIES DISCUSSED IN THIS REPORT

Tenure of office  
From                      To

DEPARTMENT OF DEFENSE

SECRETARY OF DEFENSE:

Harold Brown	Jan. 1977	Present
Donald H. Rumsfeld	Nov. 1975	Jan. 1977

ASSISTANT SECRETARY (Health Affairs)

Robert N. Smith, M.D.	Sept. 1976	Present
Vernon McKenzie (acting)	Mar. 1976	Sept. 1976
James R. Cowan, M.D.	Feb. 1974	Mar. 1976

DEPARTMENT OF THE ARMY

SECRETARY OF THE ARMY:

Clifford L. Alexander, Jr.	Feb. 1977	Present
Martin R. Hoffman	Aug. 1975	Jan. 1977

THE SURGEON GENERAL:

Lt. Gen. Charles C. Pixley	Oct. 1977	Present
Lt. Gen. Richard R. Taylor	Oct. 1973	Oct. 1977

DEPARTMENT OF THE AIR FORCE

SECRETARY OF THE AIR FORCE:

John C. Stetson	Apr. 1977	Present
Thomas C. Reed	Jan. 1976	Apr. 1977
James W. Plummer (acting)	Nov. 1975	Jan. 1976

THE SURGEON GENERAL:

Lt. Gen. G.E. Schafer	Aug. 1975	Present
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DEPARTMENT OF THE NAVY

SECRETARY OF THE NAVY:

W. Graham Claytor, Jr.	Feb. 1977	Present
J. William Middendorf II	June 1974	Feb. 1977
J. William Middendorf II (acting)	Apr. 1974	June 1974

<u>Tenure of office</u>		
	<u>From</u>	<u>To</u>

## THE SURGEON GENERAL:

Vice Admiral Willard P. Arentzen	Aug. 1976	Present
Vice Admiral Donald L. Custis	Mar. 1973	July 1976

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

## SECRETARY OF HEALTH, EDUCATION, AND WELFARE:

Joseph A. Califano, Jr.	Jan. 1977	Present
David Mathews	Aug. 1975	Jan. 1977

## ASSISTANT SECRETARY FOR HEALTH:

James Dickson, M.D. (acting)	Jan. 1977	Present
Theodore Cooper, M.D.	May 1975	Jan. 1977
Theodore Cooper, M.D. (acting)	Feb. 1975	Apr. 1975

VETERANS ADMINISTRATION

## ADMINISTRATOR OF VETERANS AFFAIRS:

Max Cleland	Mar. 1977	Present
Richard L. Roudebush	Oct. 1974	Mar. 1977
Richard L. Roudebush (acting)	Sept. 1974	Oct. 1974

## CHIEF MEDICAL DIRECTOR:

John D. Chase, M.D.	Apr. 1974	Present
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