UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

HUMAN RESOURCES
DIVISION

December 31, 1984

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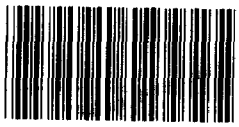
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The Honorable William Mayer, M.D.
Assistant Secretary of Defense
(Health Affairs)

Subject: Improved Guidance Could Result in More Cost-Effective Sizing of Military Medical Facilities (GAO/HRD-85-32)

Dear Dr. Mayer:

As you know, Public Law 97-337, approved October 15, 1982, requires the military services to prepare economic analyses that consider all reasonable medical care alternatives, projected workloads, and staff availability for all medical facility construction or alteration projects that receive appropriations after fiscal year 1983. This letter summarizes our views concerning the adequacy of the economic analyses prepared for the Brooke and Madigan Army Medical Centers; the Naval Hospital, Philadelphia; and the USAF Hospital, Patrick Air Force Base. It supplements our observations about the sizing of the two Army medical centers contained in our November 3, 1983, and May 21, 1984, letters to you and at our June 11, 1984, meeting with your staff concerning the sizing of the four facilities we reviewed.

We understand that since the June 11 meeting, your office

--has reduced the number of beds in the services' proposals for the Brooke Army Medical Center (from 695 to 450 beds) and the USAF Hospital, Patrick (from 75 to 30 beds),

--has been reevaluating the previously approved size of the Philadelphia Naval Hospital, and

--has deferred further consideration of the proposed size of the Madigan Army Medical Center until a congressionally mandated panel--the Blue Ribbon Panel on Sizing DOD Medical Treatment Facilities--completes its review of the criteria for sizing military hospitals and issues its report.

(101072)

The above actions should result in more appropriate sizes[1] for these four facilities. We believe, however, that our assessment of the four economic analyses points out the need to correct two systemic problems in the review and approval process for DOD medical facilities. Specifically, the analyses did not adequately consider unused beds available at other nearby military medical facilities and did not use workload data based on multi-year historical workload trend projections.

OBJECTIVE, SCOPE, AND METHODOLOGY

Our objective was to assess the adequacy of the military services' economic analyses in estimating the proper size for a proposed military medical facility's inpatient capacity after taking into account the available medical care alternatives and projected inpatient workloads. Because the four facilities' final sizes and building configurations had not been determined when we completed our work, we did not assess the reasonableness of projected staff needs and availability.

We examined the economic analyses for four facilities reviewed by the Office of the Assistant Secretary of Defense (Health Affairs) (OASD-HA) as of January 1984 and used to size facilities. The four facilities, all replacements or renovations of existing facilities, were the Brooke Army Medical Center, Fort Sam Houston, Texas; the Madigan Army Medical Center, Fort Lewis, Washington; the Naval Hospital, Philadelphia, Pennsylvania; and the USAF Hospital, Patrick Air Force Base, Florida. These facilities, which as originally proposed by the services would cost over $900 million, are a part of DOD's medical construction plan, which projects expenditures of $3.7 billion for medical facility construction between 1985 and 1989.

We made our assessments between May 1983 and June 1984. We talked with officials in OASD-HA; the Offices of the Surgeons General for the Army, Navy, and Air Force; each of the four facilities; and the firms that conducted the economic analyses. We also examined numerous documents, including the four economic analyses, relevant DOD guidance, and workload data from the four facilities. Our survey was performed in accordance with generally accepted government auditing standards.

APPROVAL PROCESS FOR MEDICAL FACILITY CONSTRUCTION

The DOD medical facility approval and construction process begins when a military service documents medical facility needs. To determine the most cost-effective method of meeting the identified needs, the service contracts with a firm for an economic analysis. The contractor follows guidance and uses data the service provides. Using the analysis, the service selects a size

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[1]As used throughout this letter report, "size" refers to the number of inpatient hospital beds proposed for a military medical facility.

for the project and submits its proposal along with the economic analysis to OASD-HA for review and approval. Once OASD-HA agrees on the need for and size of the project, the project description is sent to a DOD contracting agency (the Naval Facilities Engineering Command or the Army Corps of Engineers), which contracts for and monitors the design effort. When the design is 35 percent complete and includes the basic floor layouts and cost estimates, the Office of the Assistant Secretary of Defense (Manpower, Installation and Logistics) reviews it. After the project is approved within DOD, it is submitted for congressional authorization and appropriations.

The proposal, design, and construction cycle of a major medical facility replacement or alteration project often takes more than 6 years. All four facilities whose economic analyses we reviewed are in the design phase. Table 1 shows the sizes and estimated costs of the facilities originally proposed by the military services and the sizes subsequently approved by OASD-HA. Precise estimates of costs for the revised sizes have not yet been developed.

Table 1
Proposed Facilities

Medical facility	Estimated construction cost of original proposed size	Number of beds originally proposed by military service	Number of beds approved by OASD-HA
	(millions)		
Brooke Army Medical Center	$460 to 501	761[a]	450[b]
Madigan Army Medical Center	388	477	478
USAF Hospital, Patrick	50	75	30
Naval Hospital, Philadephia	31	149	149

[a]During the review process, the Army reduced the proposed size from 761 to 695 beds to reflect (1) 1982 baseline data versus 1980 data and (2) an 85-percent occupancy rate directed by OASD-HA instead of the 80-percent rate being used when the economic analysis was prepared.

[b]The approved size includes ancillary and support services for a 695-bed facility to allow for future expansion.

NEARBY MILITARY MEDICAL FACILITIES MUST BE CONSIDERED

Public Law 97-337 states that in sizing a facility, to provide the most cost-effective medical care, DOD should consider "all reasonable and available medical care treatment alternatives. . ." According to the House Committee on Armed Services report (House Report 97-857) on the legislation, the intent of this wording was to

> ". . .ensure that health planners have fully reviewed and considered the interaction of the proposal facility with other hospitals in the area . . . Such considerations should be included as part of the . . . economic analysis."

DOD recognized the need for interservice use of hospitals even before the law was passed. DOD Directive 6015.5, issued in 1981, established a policy of planning for "joint use of military health and medical facilities . . . to attain the most efficient and economical operation of the Military Departments." This directive states that "Every effort shall be made to reduce, consolidate, or eliminate facilities in specific areas when another facility is available to provide the necessary support."

Each of the four facilities we studied serves an area that overlaps the service area of a DOD medical care facility that had major renovation or construction completed since 1980. However, of the four economic analyses, only the Brooke analysis considered available beds at nearby DOD facilities.[2]

Table 2 identifies the DOD facility closest to each facility in our review and its fiscal year 1983 average number of unoccupied beds that might have been available to serve some of the inpatient workload at the proposed facilities. We did not determine whether staff was assigned to operate all of the unoccupied beds at the nearby facilities or whether these beds were for the medical specialties planned in the proposed facilities. However, the number of unoccupied beds in the nearby facilities, in our opinion, illustrates the need for DOD to consider them as possible alternatives to new construction.

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[2]These facilities have overlapping service areas, each covering a radius of 40 miles.

Table 2

Unoccupied Beds At Nearby DOD Facilities

Facility size selected by the service from the economic analysis			Nearby DOD facility			
Medical facility	Proposed number of beds	FY 1983 ADPL[a]	Medical facility	FY 1983 number of beds	FY 1983 ADPL[a]	Average number of unoccupied beds
Brooke Army Medical Center	761[b]	498	Wilford Hall Medical Center	1,012	569	443
Madigan Army Medical Center	477	270	Naval Regional Medical Center, Bremerton	170	72	98
Patrick USAF Hospital	75	13	Naval Regional Medical Center, Orlando	104	77	27
Naval Hospital, Philadelphia	149	68	Walston Army Hospital	464	122	342

[a]Average daily patient load—a measurement of inpatient workload.

[b]The Army reduced its proposal to 695 beds as indicated on page 3.

As mentioned, the Brooke economic analysis considered bed availability at the Wilford Hall U.S. Air Force Medical Center. Wilford Hall, which like Brooke is in the San Antonio, Texas, area, had a remodeling project completed in 1982 at a cost of about $100 million. The initial Brooke proposal, submitted to your office in April 1983, stated that Wilford Hall would be fully utilized by 1990. However, in November 1983 you requested a further assessment of its projected utilization.

Even though the ADPL at Wilford Hall had steadily declined from 785 in 1979 to 569 in 1983, the Army, in its January 1984 resubmission to your office, accepted the Air Force's statement that Wilford Hall's 1,012 beds would be fully utilized by 1990. The Air Force's method of projecting Wilford Hall's utilization did not take into account its declining inpatient workload.

As indicated on page 3, in its resubmission, the Army reduced its request for the Brooke medical facility from 761 to 695 beds. In August 1984 your office approved a 450-bed facility with ancillary and support services for a 695-bed facility, allowing for possible future expansion. A major reason cited by an OASD-HA official for reducing the number of beds was the available space at Wilford Hall.

DOD GUIDANCE NEEDED CONCERNING BASIS FOR WORKLOAD PROJECTIONS

Public Law 97-337 requires the services to base medical facility size on projected patient workload. DOD's 1983 interim guidance for implementing the act did not include guidance on how to develop workload projections.

The four economic analyses we examined assumed that the medical facilities' inpatient workloads would increase because the local beneficiary population was increasing. They used workload data for a single base year and multiplied it by the projected rate of beneficiary population growth over the next 5 to 10 years (varying among the projects) to arrive at a projected workload.

As shown in figures 1 through 4, the inpatient workloads at the four facilities have declined rather than increased as projected by the economic analyses. According to OASD-HA officials, inpatient workloads in the military medical facilities have declined because (1) more care is being provided on an outpatient rather than an inpatient basis and (2) the lengths of patient stays in the hospitals have been declining.

FIGURE 1

PROJECTED VS ACTUAL UTILIZATION

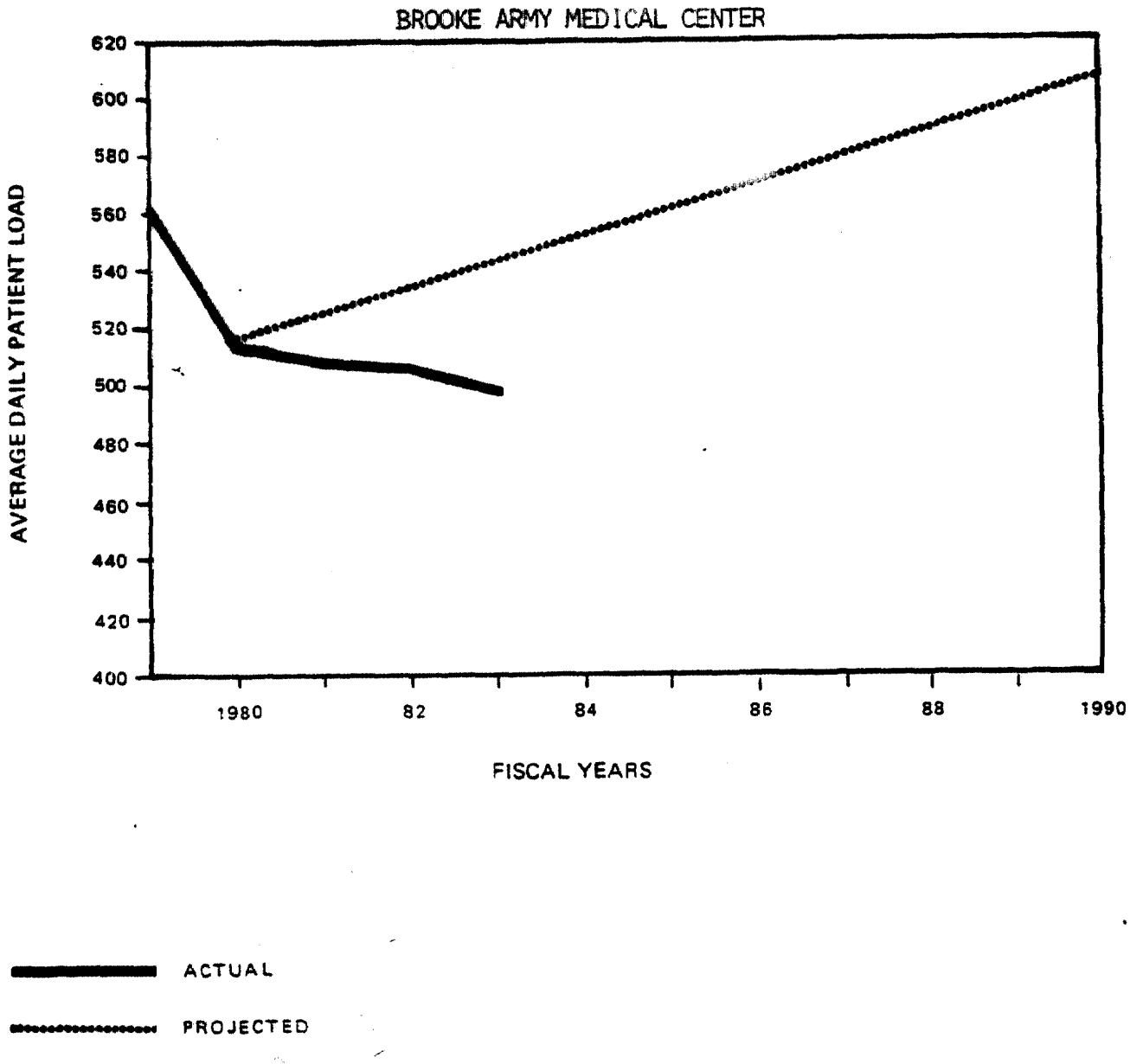
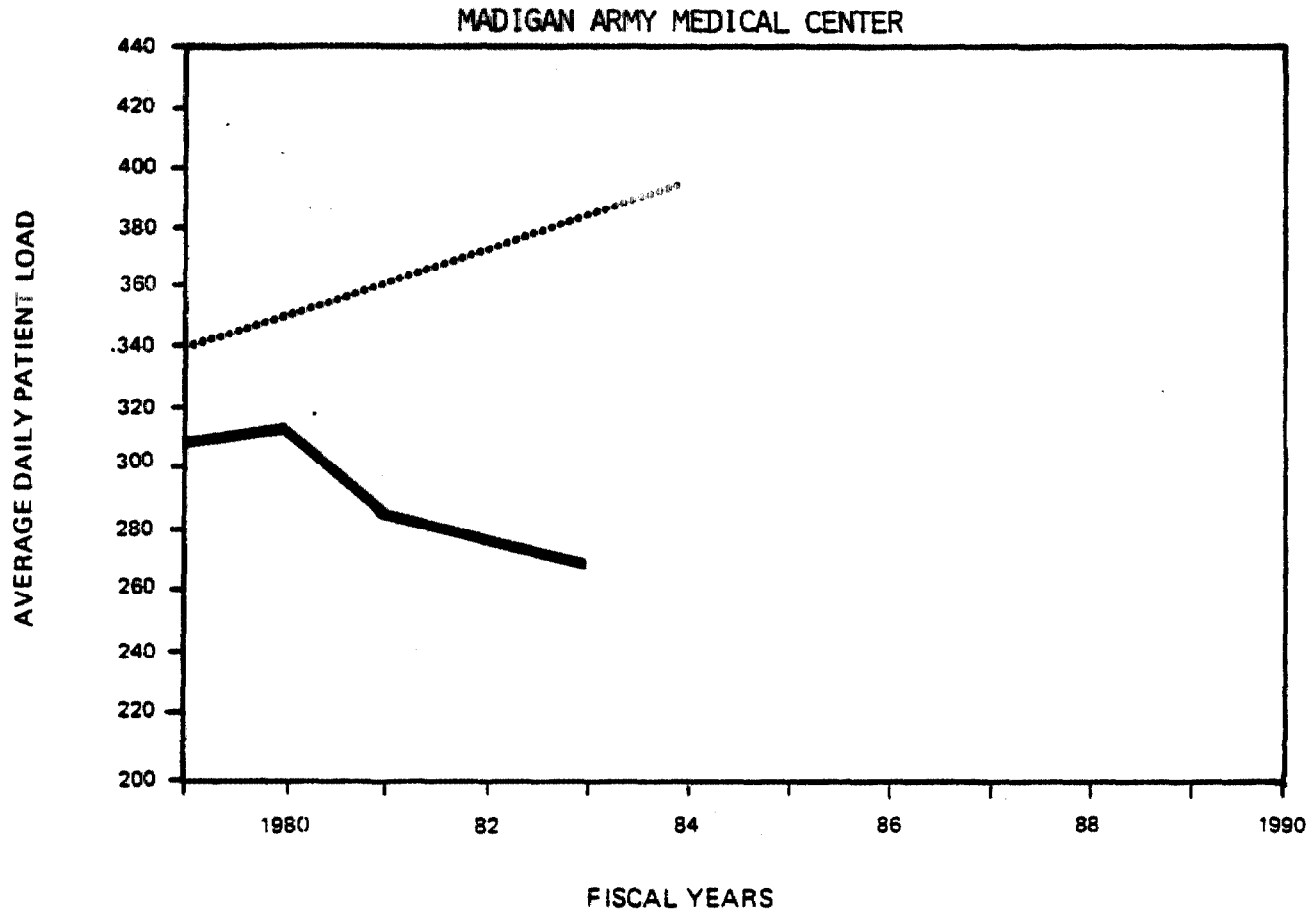


FIGURE 2

PROJECTED VS ACTUAL UTILIZATION



[a]The projected workload from the economic analysis included an unidentifiable number of newborn bassinet days which, according to officials from OASD-HA and the offices of the surgeons general, should not be included in projecting bed needs. We, therefore, excluded newborn bed days from the historical workload trends.

FIGURE 3

PROJECTED VS ACTUAL UTILIZATION

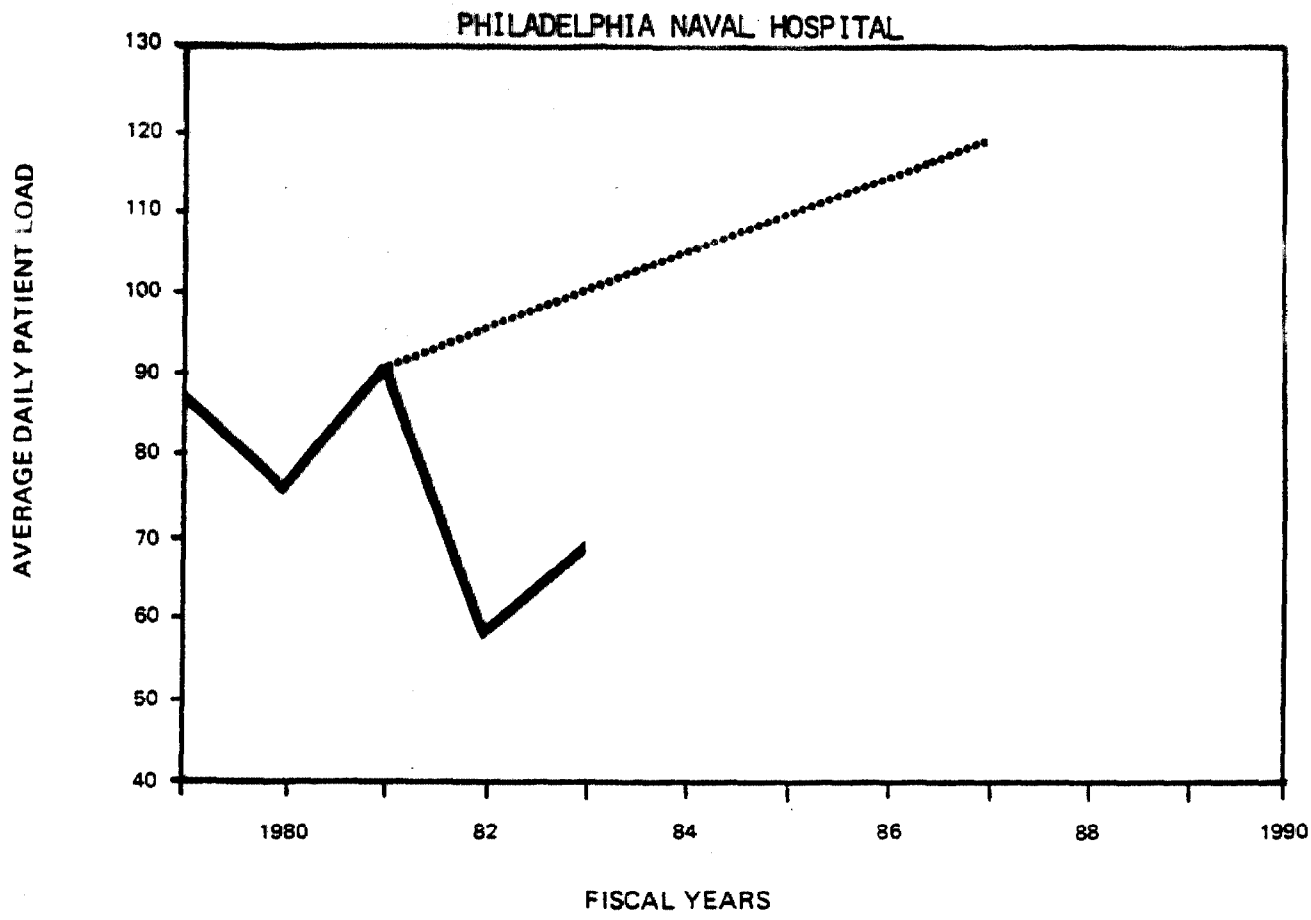
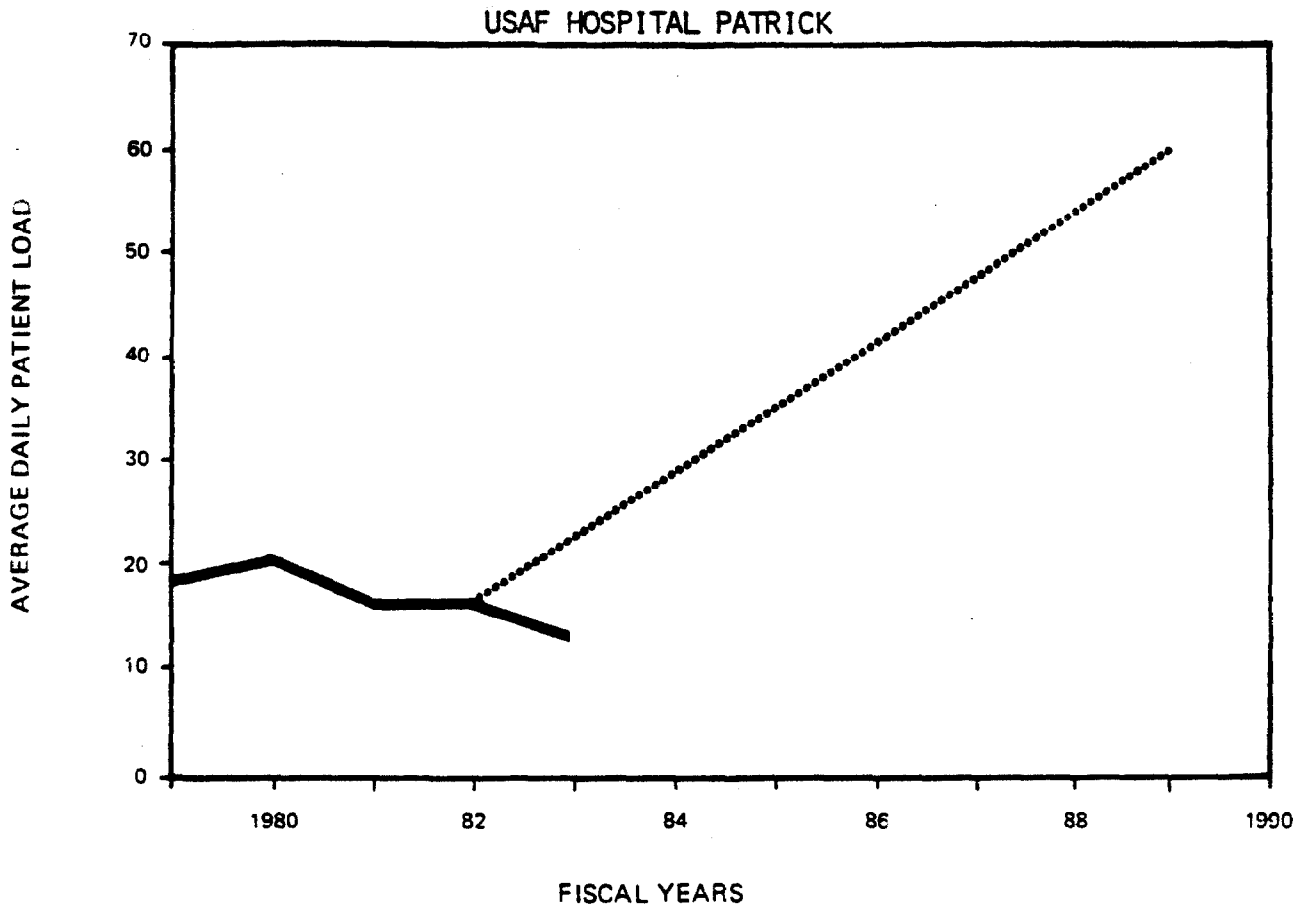


FIGURE 4

PROJECTED VS ACTUAL UTILIZATION



We did not determine the likelihood that the trends depicted in figures 1 through 4 would continue. However, the facilities' actual workload experiences since the preparation of the economic analyses call into question the analyses' projected rates of increase.

According to an OASD-HA official, the lack of realistic inpatient projections, based on historical workloads, was a key factor in OASD-HA's decision to withdraw its initial approval of the requested 75-bed facility for Patrick and instead approve a 30-bed facility. The Patrick economic analysis, completed in 1983, projected significant inpatient growth, from 16 in fiscal year 1982 to 60 by fiscal year 1989. We noted, however, that the ADPL had dropped from 20 in 1980 to 16 in 1982 and to 13 in 1983.

Since economic analyses are often prepared several years before the design of, and appropriation of construction funds for, individual facilities, more current data would be available and should be considered before construction proposals are submitted to the Congress for approval and funding. Currently DOD does not require economic analyses to be updated to reflect the most current data.

CONCLUSIONS AND RECOMMENDATIONS

The four military medical facility replacement proposals, submitted by the Surgeons General of the Army, Navy, and Air Force, did not, in our opinion, adequately consider underutilized space at nearby DOD medical facilities, as required by Public Law 97-337 and DOD Directive 6015.5.

The economic analyses on which these proposals were based used the facilities' workloads for a single year and projected increasing workloads from that year based on the projected beneficiary population growth over the following 5 to 10 years. However, an analysis of multi-year historical workload trends at the facilities we studied showed declining, rather than increasing, workloads. Trends are important in determining the appropriate sizes of medical facilities, and we believe they should be considered in preparing and reviewing economic analyses.

To help avoid the construction of oversized medical facilities, we recommend that before approving proposals for construction or alteration of DOD medical facilities, you assure that the services have complied with the provisions of Public Law 97-337 and DOD Directive 6015.5 regarding consideration of underused capacity at nearby military medical facilities. We further recommend that you issue guidance to the military services on the methods to be used for developing workload projections based on historical trends adjusted for factors (such as potential workload changes expected as a result of anticipated changes in the facilities' missions) that demonstrate that the trends are not good predictors of future workload.

As for the economic analyses already completed, some are several years old, and more current data are available that could be considered in final decisions on the sizes of the facilities involved. Since construction has not yet begun on any of the four projects discussed in this report, design changes as a result of the issues raised in this report may still be possible and desirable.

We appreciate the assistance and cooperation given our representatives during this assignment. We would like to be informed of the actions you plan to take as a result of our recommendations.

Sincerely yours,

James F. Walsh

James F. Walsh
Group Director