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[Review of Veterans Administration's Methodology for Determining Hospital Bed Size]. HRD-77-104; B-133044. May 20, 1977. 2 pp. + enclosure (25 pp.).

Report to Sen. William Proxmire, Chairman, Senate Committee on Appropriations: HUD-Independent Agencies Subcommittee; by Elmer B. Staats, Comptroller General.

Issue Area: Health Programs (1200); Health Programs: Health Facilities (1203).
Contact: Human Resources and Development Div.
Budget Function: Veterans Benefits and Services: Hospital and Medical Care for Veterans (703).
Organization Concerned: Veterans Administration.
Congressional Relevance: House Committee on Veterans' Affairs; Senate Committee on Veterans' Affairs; Senate Committee on Appropriations: HUD-Independent Agencies Subcommittee.

The process used by the Veterans Administration to determine the bed size of new and replacement health care facilities was evaluated. Three of eight hospitals currently authorized for construction were analyzed.
Findings/Conclusions: GAO's results from its computer-based model nearly agrees with the VA's proposed number of beds, but showed that the mix of beds was wrong. The VA was planning too many acute care beds and too few nursing home care beds. Given the significant cost differentials, building and operating costs can be reduced if GAO analyses were used to determine the mix of hospital beds. Recommendations: The VA should revise the mix of beds for the proposed Bay Pines (Florida), Little Rock (Arkansas), and Richmond (Virginia) hospitals in light of the computer analyses, and discard its present hospital sizing criteria and use a method similar to the one described for all future hospital construction. The Congress should explore to what extent future VA hospitals should treat veterans with nonservice-connected illnesses. (DJM)

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

MAY 20 1977

B-133044

The Honorable William Proxmire
Chairman, Subcommittee on
HUD-Independent Agencies
Committee on Appropriations
United States Senate

Dear Mr. Chairman:

Your letter dated January 4, 1977, requested that we make a comprehensive evaluation of the process the Veterans Administration uses to determine the bed size of new and replacement health care facilities.

The enclosure to this letter describes in detail the results of our analyses of three of the eight hospitals currently authorized for construction--the Bay Pines, Little Rock, and Richmond hospitals. Subsequent reports will discuss the results of our analyses of the other five hospitals.

Using our computer-based model which we developed to determine the acute care bed needs in hospitals, we estimate that the total number of beds required for the three hospitals and the Veterans Administration's proposed number of beds are nearly equal. However, our analysis showed that the mix of beds proposed by the Veterans Administration is improper--the Veterans Administration is planning too many acute care beds and too few nursing home care beds. Based upon the recognized significant differences in the cost of constructing acute care beds instead of nursing home care beds, we believe that the construction cost for the three hospitals could be reduced if the mix of hospital beds were determined on the basis of our analyses. Further, operating costs could be reduced significantly over the life of the facilities.

Accordingly, we are recommending that the Administrator of Veterans Affairs

--revise the mix of beds for the proposed Bay Pines, Little Rock, and Richmond hospitals providing for the appropriate mix computed by using our computer-based model as described in this report, and

--withdraw the Veterans Administration's hospital sizing criteria now used and implement a planning methodology similar to the one described in this report for all future hospital construction.

In view of the estimated surplus of beds in community hospitals, the fact that VA does not consider the availability of other Federal hospital beds in determining the size of its hospitals, and the large proportion of VA hospital beds devoted to the treatment of veterans with nonservice-connected illnesses, we recommend that the Congress explore to what extent VA hospitals authorized in the future should have the capacity available to provide for the treatment of veterans with nonservice-connected illnesses.

The timely resolution of this policy question could have a significant impact on the eight hospitals currently authorized.

As requested by your office, comments were not obtained from the Veterans Administration. Also as requested, we are sending copies of this report today to the Chairman of the House and Senate Committees on Appropriations, House Committee on Government Operations, Senate Committee on Governmental Affairs, House and Senate Committees on Veterans' Affairs; other Members of the Congress who have expressed an interest in the report, to the Administrator of Veterans Affairs, and to the Director, Office of Management and Budget.

Sincerely yours,

Comptroller General
of the United States

Enclosure

ENCLOSURE I

REVIEW OF THE SIZING OF VETERANS ADMINISTRATION HOSPITALS

INTRODUCTION

In a letter dated January 4, 1977, the Chairman, Subcommittee on HUD-Independent Agencies, Senate Committee on Appropriations, requested the General Accounting Office (GAO) to make a comprehensive evaluation of the process the Veterans Administration (VA) uses to determine the bed size of new and replacement health care facilities.

According to the Chairman's letter, he was concerned about construction costs associated with VA health care facilities. He referred to a May 1976 announcement to build eight new VA hospitals at a cost in excess of $800 million and was concerned that VA build hospitals of the appropriate size and with the proper mix of beds (acute care and nursing home care).

This report discusses proposed facilities at Bay Pines, Florida; Little Rock, Arkansas; and Richmond, Virginia. Subsequent reports will be issued on the other proposed facilities.

Background

VA is responsible for providing medical care for the Nation's 29.4 million veterans. The Department of Medicine and Surgery (DM&S) administers VA's health care delivery system, providing this care primarily through a system of 171 hospitals, 213 outpatient clinics, 86 nursing home care facilities, and 18 domiciliaries. In fiscal year 1978, DM&S estimates that it will employ over 190,000 people and its budget is estimated to be about $4.9 billion.

On May 11, 1976, the President announced his decision to construct eight hospitals--seven replacements and one new. The proposed hospitals, bed sizes, and estimated construction costs are listed below in VA's order of construction priority:

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Hospital	Bed size (note a)	Estimated construction costs (millions)
Richmond, Virginia	700	$111.4
Bay Pines, Florida	710	97.2
Martinsburg, West Virginia	370	62.1
Portland, Oregon	770	148.7
Seattle, Washington	b/ 515	90.0
Little Rock, Arkansas	c/ 1,585	125.8
Baltimore, Maryland	400	80.8
Camden, New Jersey (new)	360	70.2

a/Unless otherwise noted, does not include non-hospital beds such as those in nursing home care facilities or domiciliaries.

b/Includes 455 hospital and 60 nursing home care beds. Cost breakdown not available.

c/Includes all beds proposed for both the Central Little Rock and North Little Rock divisions.

Subsequent to the President's announcement, VA's fiscal year 1977 budget request to the Congress was amended to provide design funds for all eight hospitals and construction funds for the proposed facilities at Bay Pines and Richmond. Congress appropriated $221,290,000 in fiscal year 1977 for final design and construction of these two facilities. An additional $47,026,000 was appropriated for the other six hospitals for design and site preparation purposes.

Scope of review

Our review included discussions with officials of the VA Central Office in Washington, D.C., and with officials at the Bay Pines, Little Rock, and Richmond VA hospitals.

We reviewed pertinent records, reports, and other documents available at the VA Central Office and the three hospitals we visited.

Our source of statistical data on the use of VA hospitals was magnetic tapes maintained at VA's Data Processing Center, Austin, Texas. The tapes--the patient treatment file--contained information on all patients discharged from the three hospitals reviewed for fiscal year 1976. The tapes were validated by selecting a random sample of patient data and checking it against medical records on file at the hospitals.

Regarding community hospitals, the basic data for use in this study were supplied by the Commission on Professional and Hospital Activities (CPHA), Ann Arbor, Michigan. In this data, the identities of individual hospitals were not revealed in any way. Any analyses, interpretations, or conclusions based on this data are ours, and CPHA disclaims responsibility for any such analyses, interpretations, or conclusions.

PRESENT VA PLANNING METHOD RESULTS IN OVERESTIMATING ACUTE CARE HOSPITAL BED REQUIREMENTS

VA's current method of planning new VA hospitals results in the wrong mix of acute and nursing home care bed requirements. VA generally estimates the size of a new hospital by using historical length of stay data and projecting hospital admissions and patient average length of stay in the hospital. However, lengths of stay in VA acute care facilities are often longer than necessary because many existing VA hospitals lack an appropriate mix of acute and nursing home care bed

facilities. Therefore, historical utilization data may not be appropriate for determining the number of acute care beds needed.

When the appropriate mix of acute and nonacute care beds is provided, the acute care hospital average length of stay can often be considerably reduced, thus lowering the acute care bed requirements for the facility.

VA methodology for determining hospital size

VA's methodology in sizing the proposed hospitals at Bay Pines, Little Rock, and Richmond consisted of the following steps.

--Starting with 5 year historical data on hospital admissions per thousand veterans in each hospital's catchment area (geographic area expected to be served by a hospital), and estimates of veteran population in 1985, VA projected admissions to 1985, broken down into various hospital bed sections, such as medical, surgical, and psychiatric.

--Separate 1985 projections of average length of stay (Richmond and Bay Pines) or average monthly turnover rate (Little Rock) were then made using 5 year historical data for each bed section.

--By combining projected admissions with projected length of stay or turnover, VA estimated 1985 average bed occupancy for each bed section.

--Assuming occupancy rates of 85 percent for medical, 85 percent for surgical, and 90 percent for psychiatric, the average occupancy projections were converted to bed requirements for each bed section.

Projecting length of stay is a critical element in determining hospital bed requirements. Even small changes in the assumed average length of stay can have a large impact on the estimated number of beds required.

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Lengths of stay often excessive in VA hospitals

VA's projections of acute care length of stay will be inflated if they are based on historical data taken from hospitals which do not provide appropriate alternatives to acute care needs. A previous GAO study 1/ showed that VA hospital acute care length of stay could be reduced through

--discharging patients to nursing home care facilities or outpatient treatment when they no longer required acute care,

--greater use of outpatient treatment for diagnostic tests prior to hospital admission, and

--better coordination of hospital admissions with the availability of surgical facilities.

The length of stay of VA patients is generally much longer than that of similar patients in private community hospitals. According to a Congressional Budget Office (CBO) study 2/, when length of stay in VA hospitals is adjusted for age, diagnosis, and surgical procedure it is usually twice that of a community hospital. CBO's analysis of the factors causing long length of stay showed that:

> "While some of these factors may be uncontrollable because of special characteristics of the VA patient population or because certain facilities are not convenient to patients homes, it appears that further improvement in management and resource allocation in the VA system could significantly reduce the average length of stay, even if not by as much as experienced in the last decade. The VA itself, in a study showing the effect of selected factors on length of stay, concluded that certain stays in VA hospitals are excessive. The VA study indicated that the length of stay could have been

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1/"Better Use of Outpatient Services and Nursing Care Bed Facilities Could Improve Health Care Delivery To Veterans," (B-167656, April 11, 1973).

2/"Projected Acute-Care Bed Needs of Veterans Administration Hospitals," Congressional Budget Office, April 1977.

reduced 24 percent by increasing the use of outpatient treatment before hospitalization and after surgery. Scheduling admissions according to the availability of the operating room would have reduced length of stay by another 7 percent."

CBO also noted that an earlier study made by McKinsey and Company for VA reached similar conclusions.

We believe that with proper provisions for outpatient and nursing home care facilities in new VA hospital construction programs, VA can reduce its average acute care length of stay to that which currently prevails in private community hospitals among similar patient groups. By substituting outpatient and nursing home care for acute care where appropriate, considerable economies can be obtained in both construction and operating costs.

GAO'S METHOD OF ESTIMATING HOSPITAL SIZE

During an earlier review of the Department of Defense planning for the San Diego Naval Hospital 1/, we developed a computer-based model for determining the acute care bed needs in military hospitals. In July 1976, the Congress adopted a conference report on the military construction appropriations bill for fiscal year 1977 stating that acute care hospital bed requirements for active duty members and their dependents throughout the Department of Defense system should be calculated using our model. The Department of Defense is currently using the model to plan the size of its hospital facilities. We believe that this model, which we modified to consider the unique characteristics of VA, should be adopted by VA in determining its acute care bed needs.

In addition to the use of our model, a number of other matters should be considered in determining VA's acute care bed needs. These include the number of beds that should be provided to permit continued treatment of veterans for non-service-connected illness, the use of community or other Federal hospitals, and the issue of national health care insurance. These matters need to be addressed since they individually and/or collectively could have a significant impact on future VA hospital bed needs.

1/"Policy Changes and More Realistic Planning Can Reduce Size of New San Diego Naval Hospital," (MWD-76-117, April 7, 1976).

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Description of
GAO model

Our model provides an estimate of acute care bed needs by accumulating the actual patient workload by diagnosis and age group, then adjusting it to reflect data on average length of stay in non-Federal community hospitals. The community hospital data is available from the CPHA's Professional Activity Study (PAS).

PAS publishes average length of stay statistics by diagnostic category and age for patients discharged from PAS-member hospitals. Statistics are published for regions of the United States and the nation as a whole. Member hospitals use PAS data as a measure of their own efficiency in treating patients. In analyzing the bed needs for the three VA hospitals, we used the PAS data for the nation as a whole. PAS national statistics include data compiled from 13.2 million inpatients discharged during 1974 from 1801 member hospitals having a total of 374,612 beds--40.2 percent of all U.S. short-term non-Federal hospitals.

The PAS system has 349 primary diagnoses categorized. The average length of stay can be determined by knowing (1) the primary diagnosis, (2) if the patient had a single or multiple diagnosis, (3) if the patient underwent an operation, and (4) the patient's age. The value of the data is enhanced by "variance" figures which allow the user to statistically determine their degree of reliability. In general terms, the lower the variance, the smaller the deviation of individual length of stay from the average. PAS also provides length of stay figures for various percentiles of the population. For example, the length of stay figure at the 95 percentile is exceeded by only 5 percent of the population. The chart on the following page is an example of data for one diagnostic group. It illustrates, for example, that for patients with a single diagnosis of acute appendicitis without peritonitis (not operated on), in the age brackets from 50-64:

--the total number of patients reported on was 63,

--the average length of stay was 4.1 days,

--the variance value was 9, and

--5 percent of the total patients had a length of stay of 10 days or longer.

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178: Acute appendicitis without peritonitis (540.0)

TYPE OF PATIENT (1)	TOTAL PATIENTS (2)	AVG. STAY (3)	VARIANCE (4)	PERCENTILES 5th (5)	10th (6)	50th (7)	75th (8)	90th (9)	95th (10)	99th (11)
1. SINGLE DX										
A. Not Operated										
0-19 YRS	636	2.7	7	1	1	2	3	5	7	10
20-34	343	2.8	6	1	1	2	4	5	7	8
35-49	100	3.8	6	1	1	3	5	7	9	12
50-64	63	4.1	9	1	1	3	5	7	10	16
65+	31	5.3	10	<1	2	5	7	10	11	13
B. Operated										
0-19 YRS	37131	4.4	5	2	3	4	5	7	8	12
20-34	18910	4.7	6	2	3	4	5	7	8	12
35-49	5298	5.5	8	3	3	5	6	8	10	15
50-64	2498	6.4	12	3	3	6	8	10	13	19
65+	713	8.2	19	3	4	7	10	14	16	24
2. MULTIPLE DX										
A. Not Operated										
0-19 YRS	225	3.3	8	1	1	2	4	6	9	17
20-34	181	3.9	6	1	1	3	5	8	9	12
35-49	64	5.3	33	2	2	4	6	9	11	40
50-64	51	6.8	19	2	2	6	9	14	15	21
65+	45	8.3	31	2	3	7	10	16	22	24
B. Operated										
0-19 YRS	5746	6.4	18	3	3	5	7	11	14	22
20-34	4132	6.8	19	3	3	6	8	11	14	23
35-49	1619	8.4	28	3	4	7	10	15	19	25
50-64	1182	10.7	57	4	4	9	13	19	24	41
65+	712	13.2	74	4	5	11	16	23	29	46
SUBTOTALS:										
1. SINGLE DX										
A. Not Operated	1173	3.0	7	1	1	2	4	6	7	11
B. Operated	64550	4.7	6	2	3	4	5	7	8	13
2. MULTIPLE DX										
A. Not Operated	566	4.4	16	1	1	3	5	9	11	21
B. Operated	13391	7.5	29	3	3	6	9	13	17	28
1. SINGLE DX	65723	4.7	6	2	3	4	5	7	8	13
2. MULTIPLE DX	13957	7.4	29	3	3	6	9	13	17	28
A. NOT OPERATED	1739	3.4	10	1	1	3	4	7	9	16
B. OPERATED	77941	5.2	11	2	3	4	6	8	11	18
TOTAL 0-19 YRS	43738	4.6	7	2	3	4	5	7	9	14
20-34	23566	5.0	9	2	3	4	6	8	10	15
35-49	7081	6.1	14	3	3	5	7	10	13	20
50-64	3794	7.7	30	3	3	6	9	14	18	28
65+	1501	10.5	52	4	4	9	13	19	24	37
GRAND TOTAL	79689	5.1	11	2	3	4	6	8	10	18

Source: "Length of Stay in PAS Hospitals," Commission on Professional and Hospital Activities, 1974.

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Our model determines hospital size by accumulating adjusted length of stay for each VA hospital patient. This process is accomplished by a computer program designed to:

--Accumulate the actual length of stay of each patient discharged from each VA hospital during fiscal year 1976.

--Extract from the data each patient's primary diagnosis and age, as well as whether the patient had a single or multiple diagnosis, and whether the patient underwent surgery.

--Match each patient's characteristics with those of corresponding patients discharged from community hospitals during 1974 based on PAS information.

--Accumulate the corresponding PAS average length of stay for patients discharged from each VA hospital during fiscal year 1976.

--Use the accumulated patient days to calculate acute care bed requirements.

Since PAS length of stay statistics do not include patients who died, we used unadjusted actual length of stay for these patients.

Special consideration was also given to patients who had stayed in the hospital for 100 days or longer. PAS average length of stay figures do not include these individuals, but PAS percentile distribution data does. We determined the community hospital length of stay for each patient who had stayed 100 days or longer by using PAS data corresponding to the 95th percentile.

A flowchart illustrating the sequence of operations which leads to the hospital size determination is included as an appendix to this enclosure.

Using the above data, we calculated the total number of bed days for each patient discharged from each of the hospitals in fiscal year 1976. We then determined the number of acute care beds needed by calculating the average number of beds occupied on any given day and then adding a factor to allow for an 85 percent occupancy rate in medicine and surgery and a 90 percent occupancy rate in the psychiatric bed sections. These occupancy rates are consistent with those used by VA.

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The computer was also instructed to accumulate bed requirements by age category. Then, by using VA estimates of expected changes in the veteran population size and age mix between fiscal years 1976 and 1985, we projected the 1985 bed requirements for each age category.

The GAO model differs from VA's sizing methodology in one fundamental way. Instead of assuming that current and historical length of stay represent the true acute care bed requirements, the GAO model analyzes each patient admission 1/ separately and compares the length of stay to that of similar patients in community hospitals. In most cases, the GAO model substitutes community hospital length of stay for the patient's actual length of stay. In our opinion, community hospital length of stay for patients of a given age and diagnosis better reflects true acute care bed needs, assuming VA is provided with appropriate outpatient and nursing home care facilities.

The GAO model is designed to estimate acute care bed requirements for medical/surgical hospitals. Therefore, the model was not used to estimate psychiatric or nonacute care requirements, such as nursing home care facilities, at any of the hospitals studied.

Other matters which may affect VA bed needs

Our model determines VA acute care bed needs on the assumption that the basis under which VA now provides care will not change. Other matters--such as the bed capacity that should be provided to permit continued treatment of veterans for nonservice-connected illnesses, the use of community or other Federal hospital beds, and the potential impact of national health care insurance--need to be addressed since they could have a significant impact on future bed needs. These matters, which will be more fully addressed in subsequent reports, are briefly discussed below to show their importance on future planning of VA hospital needs.

1/ Patient discharges are actually used instead of admissions since VA patient data is based on discharges. Over time, admissions equal discharges (including transfers and deaths.)

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Construction of new facilities for treatment of nonservice-connected illnesses

Section 612 of title 38 of the U.S. Code provides that veterans who have medical disabilities incurred or aggravated in the line of military duty are entitled to all reasonable medical services necessary to treat such disabilities. Veterans are also entitled to medical care for nonservice-connected conditions without regard to their ability to pay if they (1) are released or discharged from military service for disabilities incurred or aggravated in the line of duty, (2) have compensable service-connected disabilities, or (3) are 65 years of age or older. Any veteran may be provided similar treatment for a nonservice-connected disability if he certifies he is unable to pay.

A large proportion of the total inpatient workload is comprised of veterans who are being treated at VA hospitals for nonservice-connected illnesses. Nationwide, about 89 percent of the patients treated during fiscal year 1976 were treated for nonservice-connected conditions. At the three hospitals we reviewed, the percentage of acute care beds required to treat nonservice-connected illnesses ranged from 86 to 91 percent.

A matter which we believe needs to be addressed is the question of whether new and replacement facilities should be sized to accommodate the entire current workload of nonservice-connected illnesses, or whether some limitation should be imposed. Since VA follows a policy of treating nonservice-connected illnesses on a space available basis, it is unclear as to whether new VA hospitals should be sized to meet all, some, or none of this demand. The bed requirements under several possible assumptions relating to this matter are estimated for each hospital on pages 16, 20, and 23.

VA does not consider availability of existing community or other Federal hospital beds

The U.S. today has over 931,000 non-Federal hospital beds, of which 20 percent are estimated to be surplus. Excess bed capacity has become a national concern in recent years. Since 1950 the total of non-Federal hospital beds for short-term and other care in general hospitals has increased from 640,000 to 931,000--more than 45 percent. When related to the national population, the ratio of beds has increased

from 3.6 beds per 1,000 population to 4.4 beds per 1,000. Excess bed capacity is one reason that hospital costs since 1950 have risen four times as fast as the consumer price index.

The National Health Planning and Resource Development Act of 1974, Public Law 93-641, provides a new approach to resolving the problems of access, cost, and quality of health care. The law created a network of more than 200 health system agencies (HSA) which are to, among other things, plan for the health resources needed in their geographic areas of responsibility.

The HSAs, in projecting the bed supply and demand, count the total population in their geographical area but do not include the Federal hospital beds in their area. The Federal agencies such as VA, in making their projections, count the population they serve but do not count community or other Federal agencies' hospital beds available. In effect, both the HSAs and the Federal agencies are counting the same population twice and are building hospital beds based on projections of these populations. To illustrate the problem of excess bed capacity, HSA projections indicate that considerable excess community hospital bed capacity will exist in the Bay Pines, Little Rock, and Richmond catchment areas in 1980.

The Florida Gulf HSA, whose catchment area falls within that of the Bay Pines VA hospital, provided data indicating that in 1980 the area will have 1,100 excess community hospital beds. Similarly, based on HSA projections to 1980, there are expected to be at least 1,363 excess beds in the Little Rock catchment area and 663 excess beds in the Richmond catchment area. While the Government bears the cost (construction, equipment, staffing, etc.) of new VA hospital beds, it is also sharing in the increased costs resulting from excess community hospital beds. Many were constructed with Federal support and operating costs are paid for, in part, through Medicare, Medicaid, and Federal health benefit programs.

Potential impact of national health care insurance legislation

The passage of some form of national health care legislation could greatly reduce the demand for VA hospital beds. All of the national health care bills now before the Congress would significantly reduce the expenses patients must bear for medical treatment. For calendar years 1973-1974, only

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12.3 percent of all discharges for veterans from short-term stay hospitals (30 days or less) were from VA hospitals. About 88 percent were discharged from community hospitals. Many veterans now using VA hospitals would undoubtedly turn to private physicians and local community hospitals for their care if such care were available at low cost to them.

Many veterans are already covered by some form of health insurance, either public or private. Under the assumption that national health care insurance would provide no better coverage than that of the average veteran's insurance today, the Congressional Budget Office (CBO) estimated that 20 percent would be the lower limit for the expected drop in VA hospital demand 1/. In developing this estimate, CBO assumed that the behavior of current insured veterans would not change under national health care insurance. Only the impact of national health care insurance on those veterans who have no coverage at present and currently use the VA system was measured.

In view of the potentially significant impact of a national health care insurance program on the demand for care in VA hospitals, Congress, when considering the authorization of new and replacement hospitals, will need to explore the role VA will play in any national health care insurance program.

SIZE ANALYSIS FOR BAY PINES, LITTLE ROCK, AND RICHMOND VA HOSPITALS

As part of our review, we evaluated the hospital size proposed by VA for the Bay Pines, Little Rock, and Richmond hospitals. Our estimate of the total number of beds required for the three VA hospitals and VA's proposed number of beds are nearly equal. However, our analysis showed that the mix of beds proposed by VA is improper--VA is planning too many acute care beds and too few nursing home care beds. Based upon the recognized significant differences in the cost of constructing acute care beds instead of nursing home care beds, we believe that the construction costs for the three hospitals could be reduced if the mix of hospital beds were determined on the basis of our analyses. Further, operating expenses could be reduced significantly over the life of the facilities. The detailed results of our size analysis for each hospital are presented on the following pages.

1/ "Projected Acute Care Bed Needs of Veterans Administration Hospitals," Congressional Budget Office, April 1977.

ENCLOSURE I

Bay Pines VA hospital

The existing VA hospital at Bay Pines, Florida, consists of 4 buildings constructed during the early 1930's, which contain a total of 693 operating beds. The hospital was originally built as a domiciliary and is located on a 350-acre tract along Florida's west coast, on the Boca Ciega Bay, 9 miles northwest of St. Petersburg, Florida. Also located on the grounds are a 322-bed domiciliary built in 1931 and a 120-bed nursing home care facility opened in 1972. In 1976, the VA hospital served a population of 322,288 veterans which, according to VA estimates, will increase to 364,719 by 1985.

The VA has proposed construction of a new 520-bed hospital (370 medical beds and 150 surgical beds), a new 120-bed nursing home care facility, and a 200-bed domiciliary on the present site. In addition, VA plans to renovate 3 existing buildings which will provide space for 190 psychiatric beds, ambulatory care, and administrative offices. The present 120-bed nursing home care building will be retained. VA's cost estimate for the project including the nursing home care facility is $110 million.

As shown by the following schedule, we estimate that, overall, 70 more acute beds are needed for the hospital at Bay Pines.

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GAO size estimate for Bay Pines VA hospital

	Current operating beds	Bed needs	
		VA proposal	GAO estimate
Acute non-psychiatric			
Medical	229	170	(a)
Surgical	151	150	(a)
Rehabilitation	31	30	(a)
Subtotal	411	350	420
Intermediate medicine	136	170	(b)
Subtotal	547	520	420
Psychiatric	126	190	c/ 190
Total hospital	673	710	610
Lower levels of care			
Nursing home care	120	240	c/ 240
Additional nursing home care	-	-	b/ 170
Domiciliary	322	200	c/ 200
Total	1,115	1,150	1,220

a/ The GAO model does not estimate medical, surgical, and rehabilitation separately but indicates a total acute care non-psychiatric bed requirement of 420 beds.

b/ We have placed VA's proposed 170 "intermediate medicine" beds under the label "additional nursing home care" to indicate that these beds do not require the staffing and ancillary services customarily required for the operation of acute care beds.

c/ Since the GAO model estimates only acute care bed requirements, VA's proposal for psychiatric bed, nursing home care and domiciliary is used.

Although 170 of the proposed hospital beds have been labeled "intermediate medicine," VA plans to construct these within the same hospital structure, and with the same support facilities as the acute care medical beds. Intermediate care patients, however, are those with long term or chronic conditions who require nursing home type of care. The average length of stay of intermediate care patients at the Bay Pines VA hospital during fiscal year 1975 was 184.3 days. Such patients are generally not found in acute care community hospitals, but are discharged either to less expensive nursing home care facilities--which are far less costly to construct and operate than acute care beds--or to their homes.

Our estimates indicate that VA's proposed mix of acute and nonacute care beds is inappropriate. Bay Pines requires 70 more acute care beds than were proposed. However, contrary to VA's plans, the proposed 170 intermediate care beds should be constructed similar to nursing home care rather than acute care. This suggests that appropriate construction would consist of 610 acute medical and surgical beds and 170 nursing home care beds in addition to the 240 nursing home care beds proposed by VA.

VA estimates that the construction cost of an acute care bed in the Bay Pines area is about $136,930 per bed and about $39,833 per nursing home care bed. We recognize that substituting a nursing home care bed for an acute care bed will not result in a savings of $97,097 per bed because some portion of construction costs are attributable to ancillary services. Nevertheless, we believe that construction costs at Bay Pines could be reduced if the mix of hospital beds were determined on the basis of our analysis. Further, operating expenses, such as staffing and support services, could be reduced significantly over the life of the facilities.

Table of policy assumptions

The table on the following page presents certain policy assumptions with regard to the treatment of eligible veterans and their impact on the required size of the Bay Pines VA hospital. If, for example, veterans were treated only for service-connected illnesses, only 85 beds would be required in the Bay Pines VA hospital. If patients with service-connected illnesses or disabilities were treated for all their illnesses, 220 beds would be needed.

Bay Pines VA hospital
acute care bed requirements under
various policy assumptions

	Bed requirements
1. Projected requirement with no restriction on beneficiary use	a/ 610
2. Projected requirement if only service-connected patients are treated (for either service-connected or nonservice-connected illness)	220
3. Projected requirement if only service-connected patients are treated for service-connected illness	85

a/ Consists of 420 acute medical/surgical beds and 190 psychiatric beds as computed by GAO.

Little Rock VA hospital

The Little Rock VA hospital is composed of two separate divisions. The Central Little Rock VA hospital, a 10-story structure opened in 1950, provides the bulk of the acute care beds and currently houses 460 acute care medical, surgical, and neurological beds.

The division which provides primarily psychiatric service, nursing home care, and care for long term, chronic patients, is referred to as the North Little Rock VA hospital. This facility consists of 12 buildings constructed mainly during the 1920's and 1930's, housing 1,007 hospital beds and 200 nursing home care beds. Although the Central and North Little Rock VA hospitals are located about 7 miles apart they are under single management. The hospitals serve a catchment area consisting of 45 Arkansas counties with a 1976 veteran population of 161,024. VA estimates the veteran population will decline to 146,787 by 1985.

VA is planning to construct a new 535-bed hospital adjacent to the University of Arkansas Medical Center to

replace the existing Central Little Rock VA hospital which is approximately 6 miles away. VA also plans to modernize the patient care buildings at North Little Rock, and construct a new multi-use recreational building. After modernization, the North Little Rock facilities will contain 850 hospital beds and 200 nursing home care beds, a decrease of 157 hospital beds from its current size. VA's cost estimates for the projects are as follows:

	Amount (million)
Replacement of Central Little Rock VA hospital	$ 75.7
Modernization of North Little Rock VA hospital	50.1
Total	$125.8

We did not use the GAO model to evaluate the proposed size of the North Little Rock VA hospital, which involves the refurbishing of 1,050 beds, since the model estimates only acute care non-psychiatric bed requirements, and no beds of this type are planned for North Little Rock 1/. The proposed replacement for the Central Little Rock VA hospital, however, has been evaluated using the GAO model, and the results are shown on the following page.

1/ While 40 neurological beds are now planned for North Little Rock, these represent a distribution of beds between Central and North Little Rock.

GAO size estimate for North and Central Little Rock VA hospitals

	Current operating beds	Bed needs	
		VA proposal	GAO estimate
Central Little Rock			
Medical	191	245	(a)
Surgical	247	230	(a)
Neurological	22	30	(a)
Subtotal	460	505	445
Psychiatric	-	30	b/ 30
Total acute care	460	535	475
North Little Rock			
All beds	1,207	1,050	b/ 1,050
Total	1,667	1,585	1,525

a/ The GAO model does not estimate medical, surgical, and neurological beds separately.

b/ Since the GAO model estimates only non-psychiatric acute care requirements, VA's proposed bed size is used.

Our estimate indicates a need for 60 fewer acute care medical, surgical, and neurological beds than has been proposed by VA for the new facility. Our estimate represents a decrease of 15 beds from the current number of operating beds in these bed sections. This decline of 3.3 percent is consistent with the expected 8.8 percent decrease in veteran population in the catchment area between 1976 and 1985, and the increase in the proportion of elderly veterans making up the population.

VA estimates that acute care beds in the Little Rock area cost about $138,043 per bed. We recognize that eliminating acute care beds will not result in a savings of $138,043 per bed because some portion of construction costs are attributable to ancillary services. Nevertheless, construction of 475 acute care beds, rather than the 535 acute care beds proposed by VA, would result in reduced construction costs.

Further, operating expenses, such as staffing and support services, could be reduced significantly over the life of the facilities.

Table of policy assumptions

The table below presents certain policy assumptions (with regard to the treatment of eligible veterans), and their impact on the required size of the Central Little Rock VA hospital. If, for example, veterans were treated only for service-connected illnesses, only 43 beds would be required at the Central Little Rock hospital. If patients with service-connected disabilities were treated for all their illnesses, 114 would be needed.

Central Little Rock VA hospital acute care bed requirements under various policy assumptions

	Bed requirements
1. Projected requirement with no restriction on beneficiary use	a/ 475
2. Projected requirement if only service-connected patients are treated (for either service-connected or nonservice-connected illness)	114
3. Projected requirement if only service-connected patients are treated for service-connected illness	43

a/ Consists of 445 acute medical, surgical, and neurological beds and 30 psychiatric beds as computed by GAO.

Richmond VA hospital

The existing VA hospital at Richmond, Virginia, consists of about 80 buildings connected by covered corridors. The hospital was constructed in 1944 and contains a total of 990 operating beds. In 1976 the hospital served a population of 221,882 veterans which, according to VA estimates, will decline to 206,105 by 1985.

ENCLOSURE I

VA has proposed construction of a 700-bed hospital and a 120-bed nursing home care facility at the present site. VA's cost estimate for the project is $116 million.

As shown by the following table, our estimate differs from VA's proposal only in the designation of intermediate care beds as a lower level of care. Patients categorized as "intermediate care" had an average length of stay in the Richmond VA hospital of 135 days during fiscal year 1975. In the private sector, such patients are generally transferred out of acute care facilities and into less expensive nursing home care facilities or to their homes. VA plans to construct 80 intermediate care beds within the same hospital structure, and with the same support facilities as the acute care beds. We believe, consistent with community hospital practice, intermediate care beds should be constructed similar to nursing home care rather than acute care. This suggests that appropriate construction would consist of 620 acute care beds and 80 nursing home care beds in addition to the 120 nursing home care beds proposed by VA.

ENCLOSURE I

GAO size estimate for Richmond VA hospital

	Current operating beds	Bed needs	
		VA proposal	GAO estimate
Acute non-psychiatric			
Medical	330	200	(a)
Surgical	194	160	(a)
Neurological	35	40	(a)
Rehabilitation	14	20	(a)
Subtotal	573	420	420
Intermediate care	66	80	-
Subtotal	639	500	420
Psychiatric	65	80	c/ 80
Spinal cord injury	161	120	b/ 120
Total hospital	865	700	620
Lower levels of care			
Nursing home care	-	120	c/ 120
Additional nursing home care	-	-	b/ 80
Total	865	820	820

a/ The GAO model does not estimate bed requirements separately but indicates a total acute care non-psychiatric bed requirement of 420 beds.

b/ We have placed VA's proposed 80 "intermediate care" beds under the label "additional nursing home care" to indicate that these beds do not require the staffing and ancillary services customarily required for the operation of acute care beds.

c/ Since the GAO model estimates only acute care bed requirements, VA's proposal for psychiatric beds, nursing home care, and spinal cord injury beds is used.

ENCLOSURE I

VA estimates that the construction cost in the Richmond area of an acute care bed is about $159,200 per bed and about $38,000 per nursing home care bed. We recognize that substituting a nursing home care bed for an acute care bed will not result in savings of $121,200 per bed because some portion of construction costs are attributable to ancillary services. Nevertheless, we believe that construction costs at Richmond could be reduced if the mix of hospital beds were determined on the basis of our analysis. Further, operating expenses, such as staffing and support services, could be reduced significantly over the life of the facilities.

Table of policy assumptions

The table below presents certain policy assumptions with regard to the treatment of eligible veterans and their impact on the required size of the Richmond VA hospital. For example, only 74 beds would be required at Richmond VA hospital if veterans were treated only for service-connected illnesses. If patients with service-connected disabilities were treated for all their illnesses 114 beds would be needed.

Richmond VA hospital
acute care bed requirements under
various policy assumptions

	Bed requirements
1. Projected requirement with no restriction on beneficiary use	a/ 620
2. Projected requirement if only service-connected patients are treated (for either service-connected or nonservice-connected illness)	114
3. Projected requirement if only service-connected patients are treated for service-connected illness	74

a/ Consists of 420 acute medical, surgical, neurological, and rehabilitation beds; 80 psychiatric, and 120 spinal cord injury beds as computed by GAO.

CONCLUSIONS

VA's current method of planning new hospitals results in the wrong mix of acute and nursing home care bed requirements. Our estimate of the total number of beds required for the Bay Pines, Little Rock, and Richmond VA hospitals nearly equals the total number proposed by VA. However, our analyses showed that the mix of beds proposed by VA is improper. By substituting nursing home care beds for acute care beds where appropriate, VA could reduce the construction costs for the three hospitals. Further, significant savings in operating expenses could be realized over the life of the facilities.

Congressional resolution of the policy question concerning the appropriateness of constructing new VA facilities with the capacity available to provide for treatment of veterans with nonservice-connected illnesses, could greatly reduce the required size of new VA hospitals.

RECOMMENDATIONS TO THE ADMINISTRATOR OF VETERANS AFFAIRS

We recommend that the Administrator

--revise the mix of beds for the proposed Bay Pines, Little Rock, and Richmond hospitals providing for the appropriate mix as computed by us using the computer-based model described in this report, and

--withdraw the VA hospital sizing criteria now used and implement a planning methodology similar to the one described in this report for all future hospital construction.

RECOMMENDATION TO THE CONGRESS

In view of the estimated surplus of beds in community hospitals, the fact that VA does not consider the availability of other Federal hospital beds in determining the size of its hospitals, and the large proportion of VA hospital beds devoted to the treatment of veterans with nonservice-connected illnesses, we recommend that the Congress explore to what extent VA hospitals authorized in the future should have the capacity available to provide for the treatment of veterans with nonservice-connected illnesses.

The timely resolution of this policy question could have a significant impact on the eight hospitals currently authorized.

APPENDIX I

SEQUENCE OF OPERATIONS IN DETERMINATION OF HOSPITAL SIZE