United States General Accounting Office 132905

GAO

Report to the Ranking Minority Member,
Committee on Veterans' Affairs,
U.S. Senate

May 1987

VA HEALTH CARE

Building Hospital in Florida More Cost-Effective Than Buying One in Mobile

GAO/HRD-87-56

GAO

United States
General Accounting Office
Washington, D.C. 20548

Human Resources Division

B-224814

May 8, 1987

The Honorable Frank H. Murkowski
Ranking Minority Member
Committee on Veterans' Affairs
United States Senate

Dear Senator Murkowski:

This report evaluates whether it is more cost-effective for the Veterans Administration (VA) to buy and renovate the Providence Hospital in Mobile, Alabama, or build a hospital in the Florida Panhandle. In evaluating these alternatives, we considered improved veterans' access to the new facilities, the amount of projected inpatient workload that would shift from existing VA hospitals to the new facilities, and cost.

We obtained official comments from VA on the matters discussed in this report. VA officials agreed with our conclusion that building a hospital in the Florida Panhandle would be more cost-effective than purchasing and renovating the Providence Hospital.

We are sending copies of this report to the Administrator of Veterans Affairs and other interested parties.

Sincerely yours,

Richard L. Fogel
Assistant Comptroller General

Executive Summary

Purpose

To meet increased demand for health care services among veterans in the Florida Panhandle, the Veterans Administration (VA) planned to build a new hospital in Okaloosa County, Florida. The former Chairman of the Senate Veterans' Affairs Committee asked GAO to evaluate whether it would be more cost-effective for VA to build this new hospital or to buy and renovate Providence Hospital in Mobile, Alabama, for the same purpose, or to do both.

In evaluating these alternatives, GAO considered (1) veterans' access (distance to be traveled) to the facilities, (2) the amount of projected inpatient workload that would shift from existing VA hospitals to the new facility, and (3) cost.

Background

Because of growth in the Florida veteran population, in 1981 the Congress directed VA to study demand by veterans for health care services over the coming 30 years. Three VA studies led to an internal recommendation in 1983 that VA build a 225-bed hospital in the Florida Panhandle. As of December 1986, however, the Administrator of Veterans Affairs had approved no plans to build a hospital in the Florida Panhandle. In 1984, Senator Jeremiah Denton asked VA to determine whether an existing facility, Providence Hospital in Mobile, would be appropriate for use as a VA hospital. After study, VA concluded it did not need a hospital in Mobile.

The existing facility, Providence Hospital, was built in 1952, with several later additions, the most recent completed in 1982. The hospital's owners built a new facility in west Mobile. The high cost of renovation was a major factor in their decision to move rather than modernize the existing facility.

Results in Brief

Building a new hospital in the Florida Panhandle would be more advantageous on all three counts—access, impact on other facilities, and cost—than would buying and renovating a facility in Mobile.

- More veterans in the Gulf Coast area would have better access to a hospital in the Panhandle than one in Mobile.
- Compared with a hospital in Mobile, a hospital in the Panhandle would minimize the shifting of projected inpatient workload from existing VA hospitals.
- Building a hospital in the Panhandle would cost $20 million less than buying and renovating the hospital in Mobile, according to VA's initial

cost estimates, prepared at GAO's request There are, however, many undefined aspects about the hospitals, such as which services they would provide, that could affect cost.

As GAO was not asked to determine whether VA needed a new hospital to provide care to veterans in the Gulf Coast area, this report should not be interpreted as supporting or rejecting such a need.

GAO's Analysis

Better Access Offered by Panhandle Hospital

To assess the potential improvement in access to health care for veterans residing in each hospital's service area, GAO used VA's methodology. Improved access was calculated by multiplying the projected veteran population for each county in a service area by the number of miles veterans in that county would save by traveling to the proposed hospital instead of to the nearest existing VA hospital. A hospital service area in the Panhandle would provide 40 percent more veteran-miles saved than one in Mobile, GAO's analysis showed.

Impact on Existing Facilities Least for Panhandle Facility

GAO considered the least impact on projected inpatient workload at existing facilities to be the most desirable. GAO determined the extent to which veterans, living in the proposed hospitals' service areas and receiving inpatient care at existing facilities, would shift to a new facility. For the year 2000, 21 percent of the inpatient workload at the two nearest existing VA hospitals would shift to a new VA hospital in Mobile, GAO estimated, while 16 percent of the inpatient workload at those two hospitals would shift to a new hospital in the Panhandle.

Cost of New Facility Less Than Cost of Renovated Hospital

To build a new 174-bed hospital in the Florida Panhandle would cost $47 million, VA estimated, but to buy and renovate Providence Hospital in Mobile for use as a 164-bed VA facility would cost $67 million. To both build a 159-bed hospital in the Panhandle and buy and renovate Providence Hospital for use as a 96-bed facility would cost VA a total of $109 million ($43 and $66 million, respectively).

The relatively high cost for Providence Hospital stems from VA expectations that (1) the mechanical and electrical systems would have to be replaced to bring the facility into compliance with various electrical and

life safety codes and (2) changes would have to be made to meet accessibility standards and VA requirements.

GAO used VA's methodology to calculate the number of beds needed in the proposed hospitals and VA's initial cost estimates, the latter prepared at GAO's request. Given many undefined aspects of the proposed hospitals, VA cautioned that its estimates were for planning and comparison only. A more reliable cost estimate, which could be used for budgetary purposes, would take about 22 months to prepare, VA said. Given the limited data available, GAO believes that VA's cost estimates are reasonable for purposes of this report.

Recommendations

This report contains no recommendations.

Agency Comments

VA reviewed a draft of this report and agreed with GAO's conclusion that building a VA hospital in the Florida Panhandle would be more cost-effective than purchasing and renovating a hospital in Mobile.

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GAO	General Accounting Office
VA	Veterans Administration

Introduction

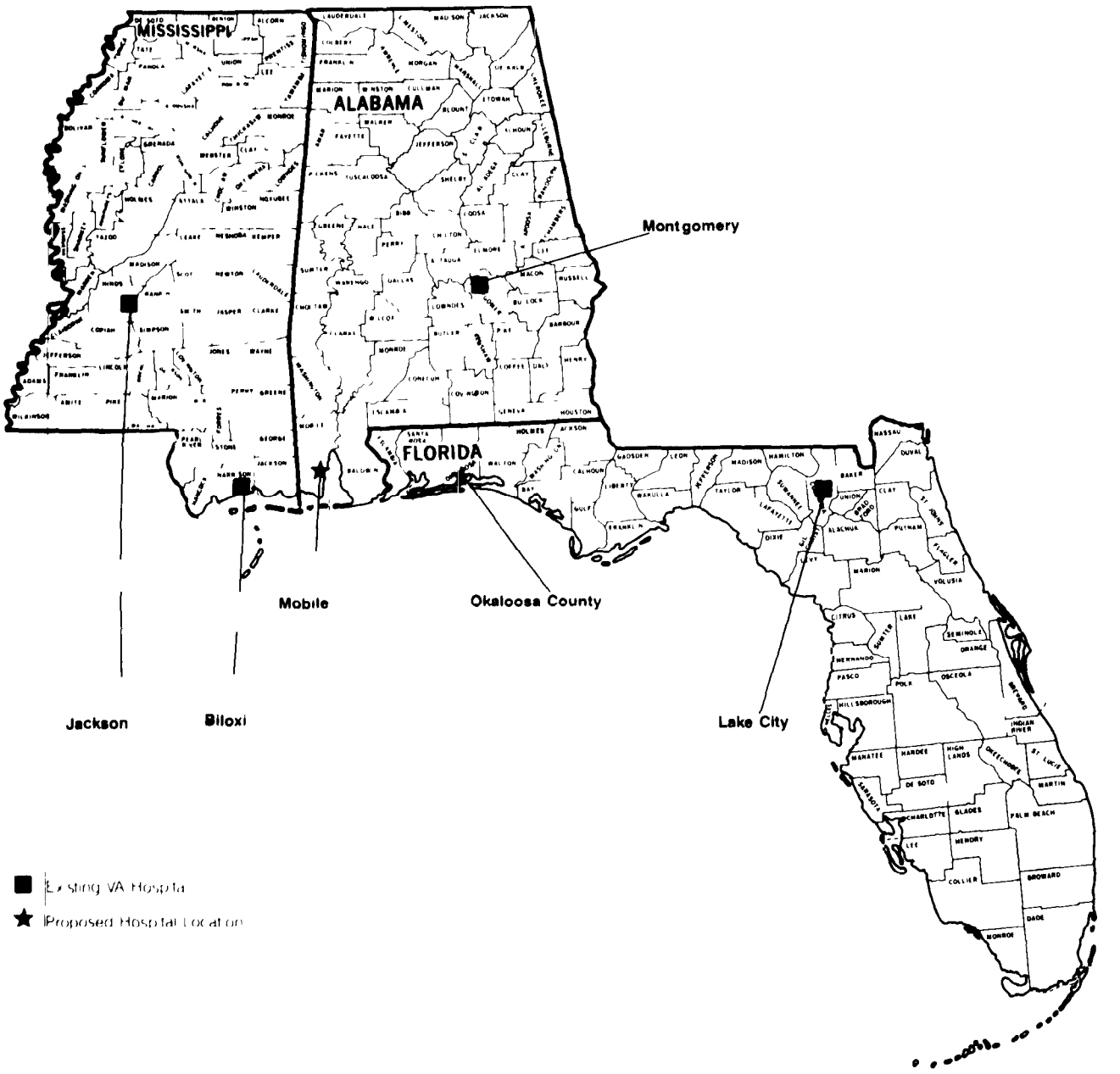
Provision of health care to veterans living in the Gulf Coast areas of Mississippi, Alabama, and the Florida Panhandle is the subject of this report. Currently, some veterans in this area travel up to 157 miles to receive services at one of four Veterans Administration (VA) hospitals. The hospitals are located in Biloxi and Jackson, Mississippi; Montgomery, Alabama; and Lake City, Florida.

In this report, we evaluate the potential cost-effectiveness of either building a new VA hospital in Okaloosa County in the Florida Panhandle or purchasing the Providence Hospital in Mobile, Alabama, for use as a VA hospital, or doing both. The closest VA hospital to Okaloosa County is at Montgomery, 127 miles away, while the closest VA hospital to Mobile is 57 miles away at Biloxi. The potential locations in Okaloosa County and Mobile are 94 miles apart. The locations of existing VA hospitals and both potential locations for a new hospital are shown in figure 1.1.

VA's plan was to build a new hospital in Okaloosa County to meet the increased demand for health care. Because of growth in the Florida veteran population, the Congress, in language accompanying Public Law 97-101 (enacted Dec. 23, 1981), directed VA to study the demand for its health care services in Florida. Three studies by VA planners resulted in a recommendation in 1983 to build a 225-bed hospital in Okaloosa County. As of December 1986, however, the Administrator of Veterans Affairs had not approved construction of this hospital.

The Providence Hospital alternative came under consideration in early 1984, when Senator Jeremiah Denton of Alabama asked VA to determine whether the existing 349-bed hospital in Mobile would be appropriate for use as a VA hospital. The facility was built in 1952 with several later additions, the most recent completed in 1982. After visiting Providence Hospital, VA officials concluded that it could be adapted to serve as a VA facility if there were a need to establish one in Mobile. But in 1985, VA determined that no such need existed, and it did not pursue the option of purchasing Providence Hospital. We were asked, however, by the former Chairman of the Senate Veterans' Affairs Committee to address certain questions relating to the provision of health care to veterans in the Gulf Coast area and the feasibility of the proposed facilities.

Figure 1.1: Locations of Existing and Proposed VA Hospitals in Gulf Coast Area



Objectives, Scope, and Methodology

In response to the former Chairman's request, we sought to answer the following questions:

- Is it more cost-effective for VA to purchase and renovate Providence Hospital in Mobile, Alabama, or to build a new hospital in Okaloosa County, Florida, to serve veterans in the Gulf Coast area, or do both?
- Did VA consistently apply its methodology for determining veterans' health care demand in the Gulf Coast area?
- Can a hospital located in Mobile be substituted for the proposed VA hospital in Okaloosa County intended to serve veterans in the Florida Panhandle?
- Should VA purchase Providence Hospital for use as a VA nursing home?

We were not asked to determine whether VA needed a new hospital to provide care to veterans in the Gulf Coast area. Therefore, the information discussed in this report should not be interpreted as supporting or rejecting such a need.

As agreed with the requester's office, we used VA's methodology to project the demand for health care. In our analysis of the cost-effectiveness issue, we used three scenarios:

1. Build a new VA hospital in Okaloosa County, Florida.

2. Purchase and renovate Providence Hospital in Mobile, Alabama.

3. Build a new VA hospital in Okaloosa County, and purchase and renovate Providence Hospital.

To determine cost-effectiveness, we determined the potential improvement in veterans' access to care, projected the potential impact a new hospital would have on the inpatient workloads of existing VA hospitals in that area, and analyzed VA cost data. In assessing potential improvement in access, we used VA's methodology to determine the number of "veteran-miles" saved. Veteran-miles saved represent the aggregate number of miles saved by all veterans residing in a new hospital's service area if each veteran were to make one trip to the proposed hospital for care instead of traveling to the existing VA hospital.

In predicting the potential impact of new hospitals on existing VA hospitals, we projected the percentage of each existing facility's inpatient workload that, based on changes in the hospital service areas, would shift to the new hospital(s). We based this analysis on actual inpatient

discharge information for veterans residing in the current service areas of the existing facilities

Costs were partly determined by the number and types of beds needed for the hospitals under each scenario. We first developed service areas for each hospital. Then, using veteran population projections for these service areas and veteran hospital utilization data, we employed VA's methodology to project the number of hospital beds. For each scenario, we provided VA's Office of Facilities with the number and types of beds for the proposed hospitals. Based on these data and other information, VA gave us cost estimates and construction schedules for each of our scenarios. We examined the basis for VA's cost estimates by reviewing the methodology with VA officials.

To decide whether VA had consistently applied its methodology for determining veterans' health care demand in the Gulf Coast area, we reviewed VA's methodologies for determining the service areas for new hospitals in Mobile and Okaloosa County and for projecting the number of beds for each facility.

By comparing the counties in the two new hospitals' service areas, we sought to determine whether a VA hospital in Mobile could be substituted for a VA hospital in Okaloosa County intended to serve veterans in the Florida Panhandle.

To determine whether VA should purchase Providence Hospital for use as a VA nursing home, we reviewed VA's 1984 nursing home care projections for the year 2000 and VA's plans to meet nursing home demand in the Mobile area. We did not attempt to validate VA's data on veteran population projections, utilization rates, or projected availability of nursing home beds in community or state nursing homes. We compared the cost of buying Providence Hospital to VA's estimated cost for building the planned 120-bed nursing home at its medical center in Biloxi, Mississippi

Our review was done from March through December 1986 in accordance with generally accepted government auditing standards.

Purchase and Renovation of Providence Hospital Compared With Construction of New Hospital in Okaloosa County

Our analyses of veterans' access to care, projected inpatient workloads that would shift from existing VA hospitals to the new facilities, and cost all favored constructing a new hospital in Okaloosa County rather than purchasing and renovating Providence Hospital in Mobile. Although the cost analysis is based on tentative data because little is known about the extent of renovations needed at Providence Hospital, we believe that the estimates are reasonable for comparing these options.

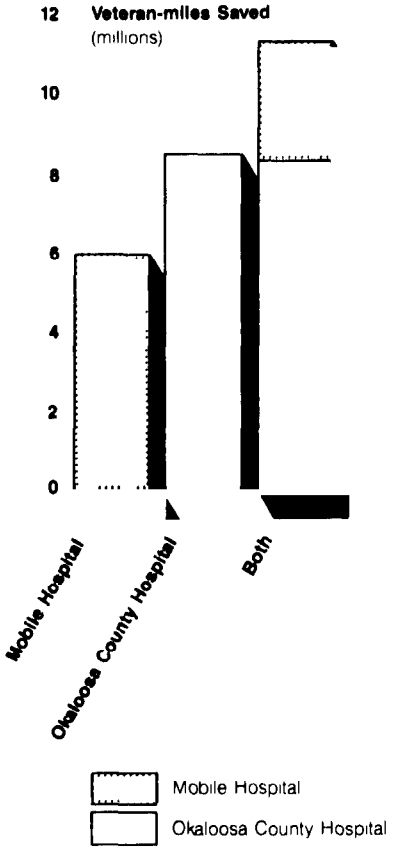
Florida Facility Would Offer Better Access to Care

Locating a hospital in Okaloosa County would provide 40 percent more "veteran-miles saved" and thus better access to care than would locating a hospital in Mobile, our analysis indicated (see figure 2.1) Although the alternative of locating hospitals in both Okaloosa County and Mobile would save the greatest number of veteran-miles, the Okaloosa County site accounted for 74 percent of the veteran-miles saved under this scenario.

To measure and compare the potential improvement in access to health care for the projected veteran population residing in the service area of each proposed hospital, we used VA's methodology, which provides a quantitative value, expressed as veteran-miles saved, as follows. The projected veteran population for each county in a service area is multiplied by the number of miles[1] veterans in that county would save by going to the proposed hospital instead of the nearest existing VA hospital. This methodology assumes that all veterans residing in the hospital service area will make one trip to the proposed hospital. For planning purposes, VA includes a county in a new hospital's service area if the county's population center is closer to the new hospital than to an existing or planned VA hospital, according to VA's current (1986) policy for determining service areas for new hospitals. We applied this methodology to establish service areas for each of our scenarios (see apps. I-IV). Thus by definition, the counties we included in either Okaloosa County's or Mobile's service areas are closer to the proposed hospital than to an existing VA hospital.

[1]Straight-line mileage (not car-miles) between the population center for each county in the service area and the population center of the county that includes the site of the proposed hospital or the existing VA hospital

Figure 2.1: Improved Access to Health Care for Veterans Residing in Proposed Hospital Service Areas



The more veteran-miles saved, the greater the potential improved access for the veterans in that service area. By comparing the veteran-miles saved in each service area, we were able to judge that the Okaloosa facility would provide better access to care for veterans in the Florida Panhandle than would the Mobile facility.

Impact of New Hospital on Existing VA Hospitals' Workloads

Our second analysis was to determine the extent to which veterans, residing in the proposed hospitals' service areas and receiving inpatient care at existing VA facilities, would shift to a new facility. The proposed hospital that would have the least amount of impact on inpatient workload at the existing facilities was considered to be more desirable.

Establishing a hospital in Okaloosa County would decrease the inpatient workload at the VA hospitals in Montgomery, Alabama, and Biloxi, Mississippi, by a total of 16 percent, we determined, while establishing a VA hospital in Mobile would decrease the inpatient workload at those two hospitals by a total of 21 percent. Establishing hospitals in both Okaloosa County and Mobile would decrease the projected workloads at the VA hospitals in Montgomery and Biloxi by a total of 28 percent. The impact on the inpatient workloads of the VA hospitals in Lake City, Florida, and Jackson, Mississippi, was insignificant.

Methodology for Projecting Impact on Inpatient Workloads

To determine what portion of the inpatient workload at an existing VA hospital might be affected by the establishment of a new VA hospital, we identified "swing counties"—those currently included in the hospital service area of an existing hospital that would shift to the service area of the new hospital. As indicated earlier, for planning and comparison purposes, we included a county in the proposed hospital's service area if the county's population center was closer to the proposed hospital than to an existing VA hospital. This assumed that veterans would seek care at the closest hospital. The service areas—and workloads—of the existing VA hospitals in Biloxi, Mississippi; Montgomery, Alabama; Lake City, Florida; and Jackson, Mississippi, would be affected to varying degrees by the establishment of a new hospital in either Mobile or Okaloosa County.

VA measures a hospital's inpatient workload in terms of its number of discharges. In past studies, VA calculated the impact of a new hospital in terms of its effect on the current workloads of hospitals. In making our estimates of impact, however, we modified VA's methodology to project the effects on workloads for the year 2000. We used (1) actual fiscal year 1985 VA hospital discharge data for each county in the existing hospital's service area by bed section (internal medicine, surgery, etc.), further broken down by age, and (2) veteran population projections for fiscal years 1985 and 2000. The impact on an existing hospital was then determined by projecting the percentage of inpatient discharges at each

of the existing hospitals that might shift to the new hospital(s) in the year 2000, using the following equation[2]:

$$\text{Impact} = \frac{1985D_s(2000P_s/1985P_s)}{1985D_a(2000P_a/1985P_a)}$$

Where:

$1985D_s$=Number of discharges of patients residing in swing counties during fiscal year 1985 for all bed sections found in both the proposed and existing VA hospitals

$2000P_s$=Projected veteran population for the swing counties in the year 2000.

$1985P_s$=Projected veteran population for the swing counties in 1985.

$1985D_a$=Number of discharges of patients residing in all counties in the existing hospital's service area during fiscal year 1985 for all bed sections found in both the proposed and existing VA hospitals.

$2000P_a$=Projected veteran population for all counties in the existing hospital's service area in the year 2000.

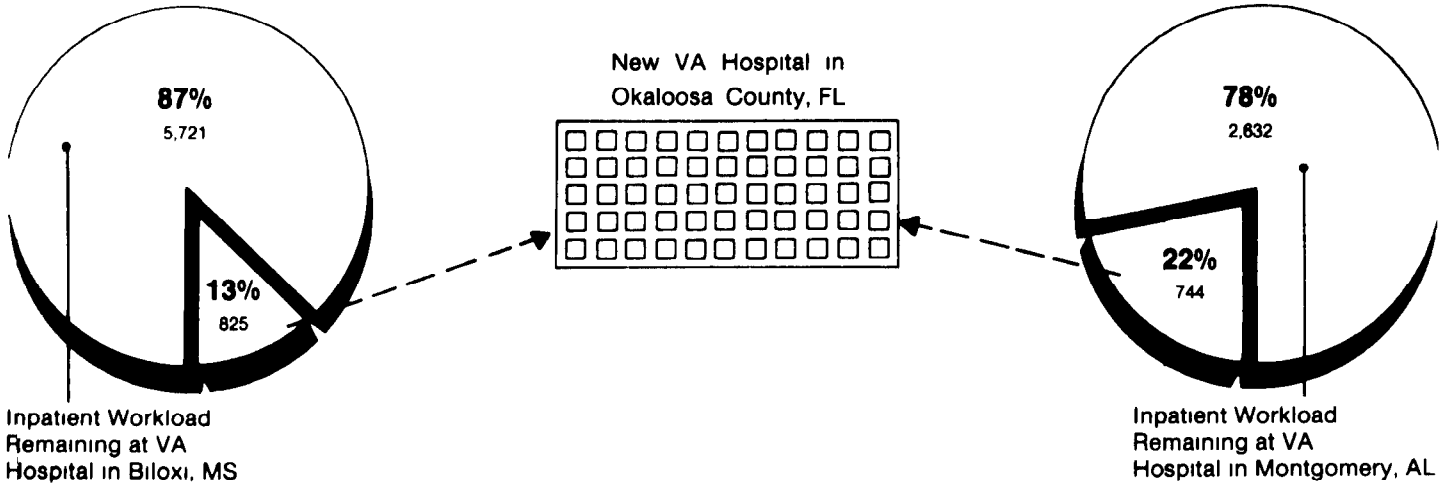
$1985P_a$=Projected veteran population for all counties in the existing hospital's service area in 1985.

To arrive at the total impact of a new facility on the VA hospitals in Biloxi and Montgomery, we divided the total discharges for both hospitals that would shift to the new facilities by their total combined discharges (all figures projected to the year 2000).

For our three scenarios, the portion of the projected inpatient discharges at the VA hospitals in Biloxi or Montgomery that might shift to the new hospital(s) in Okaloosa County and/or Mobile in the year 2000 are shown in figures 2.2, 2.3, and 2.4.

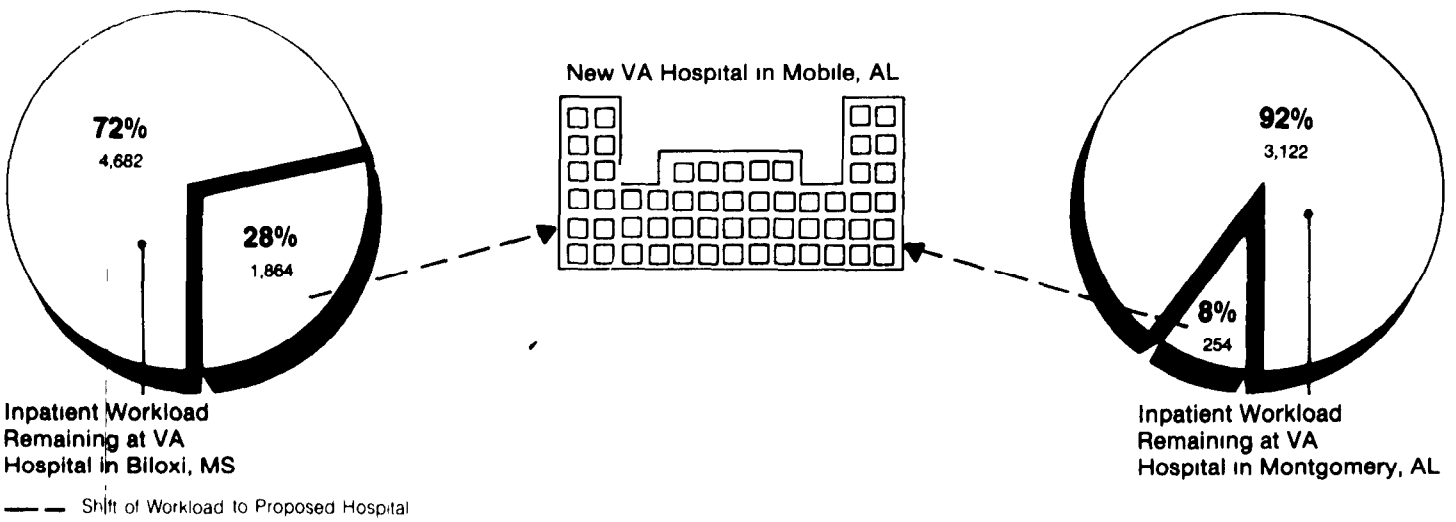
[2]Because we limited the number of surgery beds to 30 and psychiatry beds to 15 in the proposed hospitals (see p 22), we adjusted our discharge projections for these bed sections when the number of discharges from the existing hospital surpassed the capacity of the new hospital

Figure 2.2: Impact of New Hospital in Okaloosa County on Inpatient Workloads of Existing VA Hospitals (Year 2000)



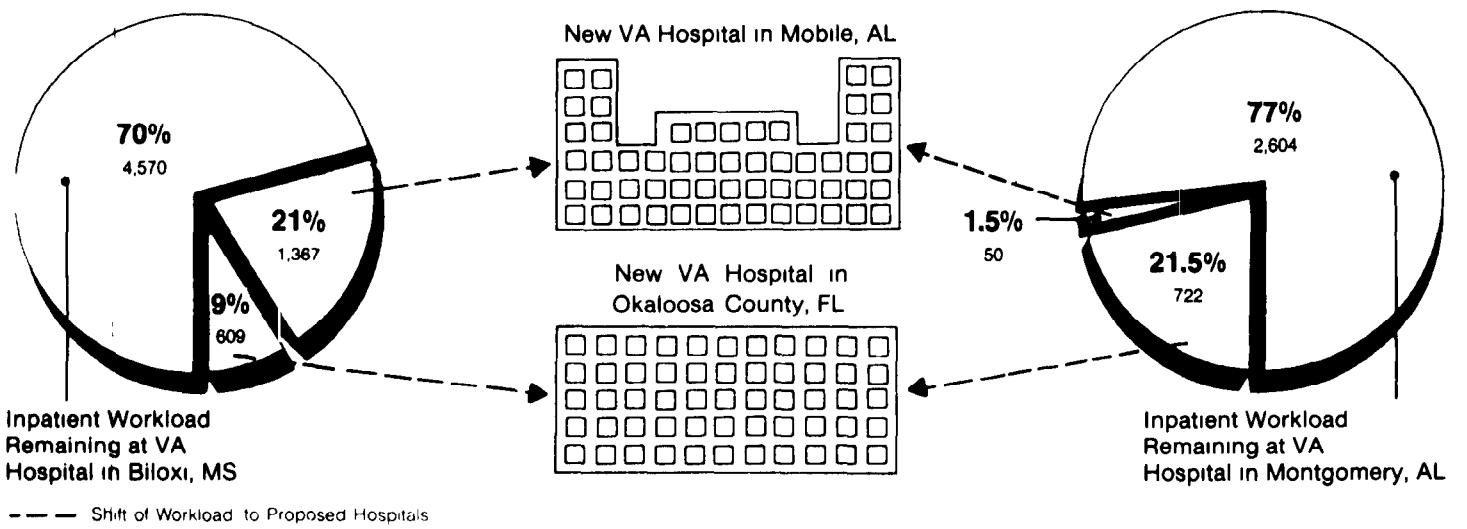
Note Numerals represent projected numbers of discharges from hospital for year 2000

Figure 2.3: Impact of New Hospital in Mobile on Inpatient Workloads of Existing VA Hospitals (Year 2000)



Note Numerals represent projected numbers of discharges from hospital for year 2000

Figure 2.4: Impact of New Hospitals in Mobile and Okaloosa County on Inpatient Workloads of Existing VA Hospitals (Year 2000)



Note Numerals represent projected numbers of discharges from hospital for year 2000

Existing Hospitals' Workloads Less Affected by Okaloosa County Facility

By calculating the combined impact a new facility would have on the existing workloads at the VA hospitals in Biloxi and Montgomery, we determined that:

1. Establishing a hospital in Okaloosa County would decrease the projected inpatient workload at the VA hospitals in both Biloxi and Montgomery by a total of 1,569 discharges (825 plus 744, as figure 2.2 shows), or 16 percent.

2. Establishing a hospital in Mobile would decrease the projected workload at both existing hospitals by a total of 2,118 discharges (1,864 plus 254, as figure 2.3 shows), or 21 percent.

3. Establishing new hospitals in both Okaloosa County and Mobile would decrease the projected workloads at Biloxi and Montgomery by a total of 2,748 discharges, or 28 percent. (We arrived at this total by summing the number of patients discharged shifting from the existing hospitals: 1,367; 609; 722; and 50, as figure 2.4 shows.)

In its 1984 strategic plan for meeting the health care needs of veterans in the year 1995, VA had planned to reduce the number of beds at its hospital in Biloxi by 52 and maintain the same number of beds at its hospital in Montgomery. According to VA planners, the 1984 plan included building a new hospital in Okaloosa County, but excluded the effects that purchasing a hospital in Mobile would have on other facilities. Therefore, we believe that, if it were to establish a hospital in Mobile, VA would probably need to reduce the number of beds at its hospital in Biloxi by more than 52.

Cost Analysis: Facilities Compared

In our third analysis, we compared VA's estimated cost for three scenarios: purchasing and renovating Providence Hospital in Mobile for use as a VA hospital, building a new hospital in Okaloosa County, and doing both. From data we provided and other information, such as floor plans for Providence Hospital and site visit observations, VA's Office of Facilities estimated that it would cost $47 million to build a new 174-bed hospital in Okaloosa County and $67 million to purchase and renovate Providence Hospital for use as a 164-bed VA hospital. For the third scenario, the total estimated cost would be $109 million to both build a 159-bed hospital in Okaloosa County and renovate Providence Hospital into a 96-bed hospital.

Establishing Hospital Characteristics and Numbers of Beds

As of December 1986, the Administrator of Veterans Affairs had not approved a construction project for either Okaloosa County or Mobile; thus, VA had performed no detailed planning regarding either hospital. To estimate costs, we had to make some assumptions about the characteristics of the proposed hospitals. Also, we projected the numbers of hospital beds using VA's latest available veteran population projections and hospital utilization data.

VA's planners had proposed in 1983 that a VA hospital in Okaloosa County (1) provide primary and secondary hospital services, (2) not be affiliated with a medical school, and (3) contain internal medicine, intermediate medicine, surgery, and psychiatry beds They had determined that a hospital with these characteristics would best fit with the other hospital services available in the district.[3] For the purposes of our analysis, we accepted these characteristics.

Using VA's bed-sizing methodology, we projected the number of hospital beds for each bed section. This methodology estimates the number of beds needed based on past utilization of medical services by veterans and the projected number of veterans residing in the hospital's service area.

To determine the number of hospital beds needed within each service area, we assumed that veterans in each service area would have access to care equal to that provided to veterans nationally, which reflects VA policy. In VA's Final Report on the Future Bed Need and Potential Sites for New VA Hospitals in Florida, the agency adopted a formal policy that the supply of inpatient services should be comparable to the national level of availability.

For our three scenarios, table 2.1 shows for each hospital the bed numbers that we provided to VA's Office of Facilities for estimating construction costs.

[3]VA's 160 medical centers are organized into 27 medical districts throughout the United States

Table 2.1: Breakdown of Hospital Beds by Bed Section for Proposed Hospitals, Projected by GAO (Year 2000)

	Number of beds by hospital			
			Both	
Bed section	**Only Providence**	**Only Okaloosa**	**Providence**	**Okaloosa**
Internal medicine	74	80	32	71
Intermediate medicine	45	49	19	43
Surgery	30	30	30	30
Psychiatry	15	15	15	15
Total	**164**	**174**	**96**	**159**

When VA planners projected the number of beds for the hospital in Okaloosa County, they limited the number of surgery beds to 30 and psychiatry beds to 15. The district planner told us that the medical district, which includes Okaloosa County (and Mobile), had more than enough such beds within the district's six existing VA medical centers. We accepted this judgment. The number of hospital beds the planners projected in 1983 and the approved bed levels recommended by the planners for a hospital in Okaloosa County are shown in table 2.2.

Table 2.2: Breakdown of Hospital Beds by Bed Section for Okaloosa Hospital Projected and Approved by VA (Year 1995)

	Hospital beds	
Bed section	**Projected**	**Approved**
Internal medicine	97	120
Intermediate medicine	26	60
Surgery	53	30
Psychiatry (crisis intervention)	43	15
Total	**219**	**225**

The total number of approved internal medicine and intermediate medicine beds is, however, 57 more than the projected number. Also, the total number of approved surgery and psychiatry beds is 51 less than the projected number. According to a district planner, the total number of projected internal medicine and intermediate medicine beds was increased by 51 (from surgery and psychiatry) to account for expected increased use by older veterans. (The other six beds were added due to rounding.) Although we accepted the planners' judgment limiting the number of surgery and psychiatry beds, we did not increase the number of internal medicine and intermediate medicine beds. When we projected the number of beds, we used age-specific data; therefore, our projected number of beds for internal medicine and intermediate medicine already accounted for increased use by older veterans.

Cost Estimates Prepared by VA at GAO's Request

Working with the characteristics of the hospital discussed above, the numbers we gave VA for beds, and information about Providence Hospital previously gathered by VA, VA's Office of Facilities agreed to provide

- estimated construction costs for building a hospital in Okaloosa County,
- estimated purchase/renovation costs for Providence Hospital in Mobile,
- a description of the office's methodology for estimating these costs, and
- an estimated construction schedule for each project.

VA's former associate director of architecture cautioned us that VA's initial cost estimates were for planning and comparison only, not for budgetary purposes. Cost estimates used for budgetary purposes are based on completed preliminary architectural and engineering plans. Judging from VA's estimated construction schedules for these projects (apps. V-VII), it would take about 22 months to complete preliminary planning

VA's Methodology for Estimating Construction and Renovation Costs

VA's Office of Facilities' cost estimates included information on cost per gross square foot, inflation, contingencies, and technical services. These items are discussed below.

To estimate new construction and renovation costs for the two Gulf Coast hospitals, VA developed cost data based on the low bids for five recent replacement hospitals (Albuquerque, New Mexico; Portland, Oregon; Minneapolis, Minnesota; Richmond, Virginia; and Bay Pines, Florida). The cost data from these hospitals were adjusted for time (1986) and location to Pensacola, which is in the Panhandle. From these data, VA developed an average cost per gross square foot for each system (foundation, substructure, electrical, etc.) used in hospitals. VA then estimated the cost per gross square foot for new construction or renovation by adding the average costs per gross square foot for those systems involved in the construction or renovation of the hospitals.

The data VA used to estimate hospital construction and renovation costs are presented in table 2.3. For building a hospital in Okaloosa County, VA used $98.53 per gross square foot. For renovating Providence Hospital, it used $70.93 per gross square foot to renovate the space needed to support the hospital requirements and $45.30 per gross square foot to renovate the space that would remain vacant.[4]

[4]About 23 percent of the available space in the Providence Hospital would not be used if it were renovated for use as a 164-bed facility (See p 25)

Table 2.3: System Costs Used by VA to Estimate Hospital Construction/ Renovation Costs

Figures are cost per gross square foot in 1986 dollars

System	Okaloosa hospital[a]	Providence Hospital[b]	
		Used space	Vacant space
Foundation	$2 68	•	•
Substructure	2 16	•	•
Superstructure	15 89	•	•
Exterior construction	7 02	$1 73	•
Roofing	1 40	•	•
Interior construction	13 62	13 62	•
Conveying	5 40	•	•
Mechanical	25 59	25 59	$25 59
Electrical	10 51	10 51	10 51
Equipment	5 23	5 23	•
General condition	9 03	9 25	5 90
Demolition of interior	•	5 00	3 30
Total	**$98.53**	**$70.93**	**$45.30**

[a]New construction

[b]Renovation

In addition to these construction costs, VA added other customary costs, such as those for inflation, contingencies, and technical services, to arrive at a total project cost:

- For inflation from 1986 to December 1990, VA increased its estimated construction cost by 20 percent. The inflation rates it used were those required by the Office of Management and Budget for federal construction of nonresidential structures.
- Contingency costs, which provide funding for unforeseen changes during construction, usually are a percentage of construction costs. Normally, when making final cost estimates, VA uses 5 percent contingencies for new construction and 7.5 percent contingencies for renovation projects Because these two projects had many undefined aspects at this early stage of development, VA estimated the contingency costs for both hospitals at 10 percent of construction cost
- Technical services cover architect and engineering fees and such other costs as engineering testing, surveying, and printing. Usually, when making final cost estimates, VA allows 7.5 percent of the architect and engineering award costs for technical services. Again, given the many undefined aspects of both these projects, VA estimated technical services costs at 10 percent of the award costs.

Cost Estimate for Building a Hospital in Okaloosa County

To build a 174-bed hospital in Okaloosa County would cost $47 million, according to VA's initial cost estimate. Working from historical experience, VA officials estimated that each hospital bed required, on average, 1,538 gross square feet, including all support services. For Okaloosa County, VA multiplied 174 beds by 1,538 gross square feet to arrive at the 267,612 gross square feet estimated for this project VA then multiplied this figure by the average construction cost ($98.53 per gross square foot) and added other costs, including utilities and site work, inflation, contingencies, and technical services, to arrive at the total estimated project cost. Details of VA's initial cost estimate for the Okaloosa County facility appear in appendix V

Cost Estimate for Purchasing and Renovating Providence Hospital

For Providence Hospital in Mobile, VA's initial cost estimate was $67 million to purchase and renovate the facility for use as a 164-bed VA facility VA's estimate included $24 million (1983 appraised value) to purchase the hospital and $43 million to renovate it. In preparing the estimate, VA used the 1983 appraised value as representing the latest available estimate of the facility's fair market value, according to officials in VA's Office of Facilities.

VA would need to use 338,367 of the facility's available 440,626 gross square feet, it was estimated. This projection was made by officials from the Office of Facilities from observations during their 3-day visit there in 1984 and from floor plans and other technical information (including our input on the number and type of beds). The estimate included the sum of space for each service area plus major mechanical and circulation areas (corridors, stairways, lobbies, and elevators).

The officials recognized that the 338,367 gross square feet was substantially more than necessary to support a 164-bed facility; they were willing to keep some functional areas of the hospital at larger sizes than necessary to keep the renovation cost down. Further, compared with renovation projects, new construction provides opportunities to optimize the size and layout of each medical service, they told us. This was highlighted by the fact that about 71,000 gross square feet more was needed for a 164-bed facility at the Providence Hospital than for a 174-bed hospital at Okaloosa County, according to VA estimates. The remaining 102,259 gross square feet at Providence Hospital would be vacant space.

To estimate the total cost of renovating Providence Hospital, the Cost Engineering Service used two separate cost factors. It multiplied the 338,367 gross square feet to be used by the average renovation cost of

$70.93 per gross square foot and the 102,259 gross square feet of vacant space by an average renovation cost of $45.30 per gross square foot. (Renovating vacant space mainly involves correcting code violations.) In addition, VA included other costs, such as inflation, contingencies, and technical services, to arrive at the total estimated project cost of $67 million. Details of VA's initial cost estimate to purchase and renovate the facility appear in appendix VI Some of the factors in the higher cost of the renovated versus the new facility are discussed later in this chapter.

Cost Estimate for Developing Both Facilities

For the third scenario, to both build a 159-bed VA hospital in Okaloosa County and buy and renovate Providence Hospital for use as a 96-bed VA facility, VA followed the same methodology in making its cost estimate (see app. VII for details). For this scenario, the number of beds for the Providence Hospital dropped from 164 to 96 beds because a large number of veterans residing in four counties, located between Mobile and Okaloosa County, were closer to Okaloosa County than to Mobile (See apps. III and IV for a list of the counties we included in the hospital service areas for this scenario.)

Further Considerations Affecting Renovation Costs at Providence Hospital

Providence Hospital was constructed in several phases beginning in 1952. Additions were made in 1959, 1965, 1972, and 1982 Officials from VA's Office of Facilities and its Department of Medicine and Surgery and appraisers (hired by the hospital's owners) from Courtney and Morris Appraisals, Inc., have toured the facility. In 1983, the appraisers characterized the overall condition of the hospital as "average to above average," while VA officials in 1984 characterized it as "well maintained" and in "generally good condition." Both VA and the independent appraisers characterized the 1982 addition as being in excellent condition

Deficiencies Previously Recognized

Nevertheless, the March 1984 report of the VA team's visit cited several deficiencies that would require modification were VA to purchase the facility But it would be difficult to estimate the cost of these modifications, VA officials reported, without developing staffing, workload data, and space requirements for each service to be provided by the hospital (e.g., ambulatory care, surgery, prosthetics, radiology, and dental). They concluded that a detailed analysis would be needed to determine such costs.

The independent appraisers recognized that a purchaser probably would have to make substantial renovations to this facility, despite their remarks on its overall condition. In its report, Courtney and Morris Appraisals commented.

"One must further recognize that any purchaser of the facility would almost assuredly incur significant costs of renovation to adapt the property to a particular hospital user's specifications. While these costs cannot be ascertained unless a specific user is known and enumerates needed design changes, experience has revealed that such penalties are very significant "

And finally, officials at Providence Hospital had determined that renovating the facility would be expensive, which was a major factor in their decision to build a new hospital instead. Initially, officials at Providence Hospital had planned to upgrade the facility. These plans had included:

1. Renovating the 1952 and 1959 wings of the hospital to bring those areas into compliance with National Fire Protection Association Life Safety and state of Alabama codes. This project, scheduled for 1983, had included smoke dampers required by the code and recommendations of the Joint Commission on the Accreditation of Hospitals.

2. Replacing the 1952 and 1959 wings of the hospital with a new patient tower. This project had been scheduled for 1990.

The projects were dropped because of a decision to build in west Mobile a new replacement facility that would meet current codes and recommendations from the Joint Commission. In a September 1984 letter to the Joint Commission, the President of Providence Hospital wrote, "One of the major justifications for constructing the new replacement facility was the high cost of renovating and replacing facilities at the present location."

Renovation Cost Factors Detailed by VA

VA officials noted a number of factors that contributed to its estimated cost of renovating Providence Hospital for use as a VA facility. Among these factors were poor adaptation of space, noncompliance with various codes and standards, aging or obsolete systems, inaccessibility for the handicapped, and possible asbestos contamination. Certain measures could also be employed, however, to keep the costs of renovation down. These matters are discussed below in more detail.

Were VA to acquire Providence Hospital, needed alterations would include moving some services to consolidate vacant space, primarily in the older sections of the hospital, according to officials of VA's Office of Facilities. In addition, they would move some services within the usable space. For example, the existing hospital has eight operating rooms, but a 164-bed facility would require only two, they said. VA would move the operating rooms from the first floor to a smaller area on the fourth floor, contiguous to the intensive care unit, and convert the vacated operating room space on the first floor to other clinical services.

Another source of renovation costs, VA officials noted, would be the need to comply with current National Fire Protection Association Life Safety Codes and the Uniform Federal Accessibility Standards. Changes to existing heating, ventilation, and air-conditioning systems would be needed to meet current codes where (1) corridors were used for air returns and (2) recirculated air instead of fresh was used in the operating rooms The laboratories might need exhaust hoods added to meet VA's criteria and thus would require an additional outside air supply.

The heating, ventilation, and air-conditioning systems in the 1952, 1959, and 1965 additions were nearing the end of their useful lives, officials from VA's Mechanical Engineering Service noted, and would need replacement before VA patients occupied the hospital. To replace these systems when the hospital was occupied would be very disruptive and more costly, they said.

Also, existing electrical systems, except in the 1982 addition, should be modified where necessary to meet current national electrical codes and VA requirements, VA officials said. Moving services from one area of the hospital to another might require rewiring of the new areas. The electrical switch gear equipment and transformer voltage would require upgrading, according to VA officials, and some changes to the fire alarm and grounding systems would be needed. Any modifications to the heating, ventilation, and air-conditioning systems would also require modification or replacement of the lighting system. Portions of the heating, ventilation, and air-conditioning system and the electrical system were located above the ceilings, Office of Facilities officials said. To make changes to these systems, the ceilings in the affected areas of the hospital would have to be removed and then replaced.

To comply with current Uniform Federal Accessibility Standards, VA officials said, alterations would be needed to provide special clearances

for wheelchair accessibility for varied percentages of bedrooms, bathrooms, and toilets. This would require extensive bathroom renovations to improve handicapped access to toilets, they said.

Finally, VA's cost estimate included nothing for asbestos removal because the extent of the asbestos in Providence Hospital was unknown. Before being banned by the Environmental Protection Agency, asbestos was commonly used for insulation purposes. During a 1-day site visit in June 1986, an industrial engineering firm, Thompson Engineering Testing, examined the composition of various insulation materials in Providence Hospital. The firm took six samples from insulation in the main boiler, equipment, and mechanical rooms. The asbestos content in the six insulation samples was 35, 33, 8, 4, 0.7, and 0 percent. The firm's report cautioned, "Time constraints did not allow precise delineation and quantification of the location and amount of asbestos-containing materials, and further evaluations would be required to accomplish the same."

To keep the costs of renovation down, officials from VA's Office of Facilities said, their goal would be to retain, as much as possible, the current configuration of services at the facility. They would not change the physical location of the patient rooms or areas for supplies, processing, and distribution; mechanical plants; engineering shops; warehouses; kitchen; or cafeteria. In addition, to avoid partitioning and/or rearranging some of these areas, officials would accept some of them at larger sizes than necessary to support a 164-bed hospital.

But given the lack of detailed information at the time, officials from VA's Cost Engineering Service could not provide exact cost estimates based on the extent of renovations for various parts of the hospital To do so, they said, would require design details available only when appropriate engineering and architectural drawings were completed. Based on VA's estimated construction schedules, such drawings would take about 22 months to complete. Instead, VA's Cost Engineering Service officials applied an average cost per gross square foot to the entire area (as discussed on p 25), recognizing that some areas of the hospital might require minor alterations while others might require extensive alterations.

Conclusions

We believe that it would be more cost-effective for VA to build a hospital in Okaloosa County than to purchase and renovate Providence Hospital in Mobile for use as a VA hospital. The option of both building the

Okaloosa County hospital and buying and renovating Providence Hospital would improve access to VA health care for the greatest number of veterans, providing a 25-percent increase in veteran-miles saved over the next best access option of building only in Okaloosa County. But the estimated cost of developing both facilities is about 230 percent of the cost of building the Okaloosa hospital only.

Locating a new hospital in Okaloosa County rather than in Mobile would minimize the amount of inpatient workload that would be drawn away from other VA hospitals.

Finally, building a new VA hospital in Okaloosa County would cost $20 million less than purchasing and renovating Providence Hospital, VA's initial cost estimates indicate. We recognize that these estimates were based on very limited data, especially concerning the extent of renovations needed to bring the Providence Hospital into compliance with applicable codes and VA requirements. But to obtain such data would be costly, in terms of both time and money. Given the limited data available, we believe that VA's cost estimates were reasonable for comparison purposes.

Agency Comments

VA reviewed a draft of this report and agreed with GAO's conclusion that building a VA hospital in the Florida Panhandle would be more cost-effective than purchasing and renovating a hospital in Mobile.

Other Issues Concerning VA's Plans for a Hospital in the Gulf Coast Area

With respect to the three additional questions concerning a new VA Gulf Coast area hospital that were posed by the former Chairman of the Senate Veterans' Affairs Committee, we found that:

- VA consistently applied its methodology in 1983-84 when it determined the service areas for the hospitals in Okaloosa County and Mobile and projected the number of beds for each hospital.
- A hospital in Mobile would not serve 49,760 (or 38 percent) of the 131,330 veterans residing in the hospital service area for Okaloosa County. Therefore, a hospital located in Mobile would not be a good substitute for a hospital in Okaloosa County.
- Purchasing Providence Hospital for use as a VA nursing home would be more costly than VA's planned addition of nursing home beds at its medical center in Biloxi, Mississippi.

VA Methodology for Determining Service Areas and Number of Beds Needed

When VA determined the service areas for the hospitals in Okaloosa County and Mobile in 1983-84 and projected the number of beds for each hospital, it applied its methodology consistently Usually, when planning for hospitals, VA expresses health care demand in terms of the number of beds needed at a given location. During its Florida study, VA adopted a formal policy that Florida veterans should have access to inpatient care at the same level as veterans nationally. Consequently, VA planners estimated the number of beds for the proposed hospitals in Okaloosa County and Mobile using its national hospital utilization rate (number of beds per thousand veterans) and the projected numbers of veterans residing in the respective hospitals' service areas.

To project the number of beds needed at both locations, VA first established the service areas for the two proposed hospitals. VA normally bases the service area for an existing VA hospital on actual veteran usage of that facility. But in 1983-84, when planners established the service areas for potential hospitals in Mobile and Okaloosa County, VA had no written guidance for determining service areas for new hospitals,[1] according to VA officials from the central office and the medical district. For planning purposes, however, counties whose population centers were closer to the new hospital site than to an existing hospital initially were included in the new hospital's service area, officials said.

[1] VA's 1986 policy for establishing service areas for new hospitals states that counties whose mass of population is closer to the new location than to an existing or planned VA facility would be part of the new hospital's service area No allowance was made for adjusting the service areas

Using such factors as local knowledge of the highway systems and where veterans work and shop, the planners made judgments about where veterans in certain counties would travel for care and excluded from each service area some counties that were closer to the new facility than to an existing facility. It was impossible to say with certainty where veterans would actually travel for care, the planners noted A detailed discussion of VA's rationale for counties included in its hospital service areas for Okaloosa County and Mobile is presented in appendix VIII. We believe that, with one minor exception (discussed on p. 49), VA consistently applied this methodology in establishing service areas for the hospitals in Okaloosa County and Mobile.

Once VA had identified the counties in each service area for these hospitals, it determined the total number of veterans residing in the service area by totaling the projected veteran population for these counties. To determine the number of hospital beds needed in each service area, VA multiplied the number of veterans (in thousands) in each service area by its national hospital utilization rate (number of beds per thousand veterans).

For each service area, we checked VA's computations of the numbers of veterans residing in the area and beds needed. The computations were accurate.

In our analysis of the cost-effectiveness of the three scenarios in chapter 2, we used VA's 1986 policy for establishing service areas and its bed-sizing methodology for determining the number of beds. Therefore, the data used in our analyses are different than those developed by VA in 1983-84.

Hospital in Mobile Not a Good Substitute for Hospital in Okaloosa County

Initially, VA planners recommended building a hospital in Okaloosa County to meet the increasing demand for health care by veterans in the Florida Panhandle. Subsequently, congressional interest focused on an alternative, to acquire Providence Hospital for conversion to a VA facility to provide care to these veterans. We were asked to determine whether a hospital in Mobile could be substituted for one in Okaloosa County intended to serve veterans in the Florida Panhandle

To address this question, we compared the service areas for both hospitals, using the same service areas discussed in chapter 2 for estimating the number of beds, access to care, and impact on inpatient workloads of existing VA facilities. (See apps. I and II for the counties we included) In

contrast to VA's service areas for these hospitals (see app. VIII for the counties it included), we did not exclude counties that were closer to the proposed hospitals than to the existing hospitals. Thus, the total number of veterans in our service areas exceeded VA's totals by about 25,000.

Comparing the two service areas, we found that a hospital in Mobile would not serve 17 counties, or 49,760 (or 38 percent) of the 131,330 veterans residing in the hospital service area for Okaloosa County. This was because, of the 23 counties within Okaloosa County's hospital service area, 17 were farther from Mobile than from the VA hospital they currently used. These 17 counties, primarily located east of Okaloosa County, were.

- Alabama: Coffee, Conecuh, Covington, Geneva, and Houston.
- Florida: Bay, Calhoun, Franklin, Gadsden, Gulf, Holmes, Jackson, Liberty, Walton, and Washington.
- Georgia: Decatur and Seminole.

Therefore, we believe a hospital in Mobile would not be a good substitute for a hospital in Okaloosa County.

Purchasing Providence Hospital for Use as Nursing Home More Costly Than Adding Nursing Home Beds at Biloxi

As requested by the former Chairman, we also considered the purchase of Providence Hospital for use by VA as a nursing home. To meet the projected nursing home care demand of veterans in its Biloxi nursing home service area, which included the Mobile area, VA planned to build a 120-bed nursing home at its medical center in Biloxi, Mississippi. In 1984, VA planners projected that by the year 2000, 348 veterans in the Biloxi service area would seek nursing home care from VA each day. Of the 348 veterans, 72 would receive care in state veterans' homes (not yet built), 162 would be cared for in community nursing homes under contract with VA, and the remaining 114 would be cared for in the new 120-bed VA nursing home at Biloxi, according to VA projections.

The estimated construction cost for the new 120-bed nursing home at Biloxi is $7.8 million. In comparison, Providence Hospital was appraised at $24 million in 1983. Were VA to purchase Providence Hospital, it would have to renovate the facility to adapt it to a VA nursing home, incurring additional costs. Therefore, building the planned VA nursing home at Biloxi would be a less costly option.

Counties Included by GAO in Hospital Service Area for Okaloosa County

County	Projected veteran population (year 2000)
Baldwin, AL	11,050
Coffee, AL	3,770
Conecuh, AL	840
Covington, AL	3,340
Escambia, AL	2,570
Geneva, AL	1,760
Houston, AL	7,270
Monroe, AL	1,600
Bay, FL	14,060
Calhoun, FL	600
Escambia, FL	35,070
Franklin, FL	880
Gadsden, FL	2,970
Gulf, FL	1,010
Holmes, FL	1,370
Jackson, FL	3,390
Liberty, FL	520
Okaloosa, FL	22,460
Santa Rosa, FL	8,820
Walton, FL	3,530
Washington, FL	1,720
Decatur, GA	2,090
Seminole, GA	640
Total	**131,330**

Note In establishing hospital service areas, we assumed that all veterans living in a given county would seek care at the closest VA hospital, determined by measuring the straight-line mileage between the population centers of the given county and the county that includes the site of the new or the existing VA hospital By definition, then, the counties in this service area were closer to Okaloosa County than to an existing VA hospital

Counties Included by GAO in Hospital Service Area for Mobile

County	Projected veteran population (year 2000)
Baldwin, AL	11,050
Choctaw, AL	1,240
Clarke, AL	1,920
Escambia, AL	2,570
Mobile, AL	35,610
Monroe, AL	1,600
Washington, AL	1,100
Escambia, FL	35,070
Okaloosa, FL	22,460
Santa Rosa, FL	8,820
George, MS	1,170
Greene, MS	490
Wayne, MS	1,410
Total	**124,510**

Note In establishing hospital service areas, we assumed that all veterans living in a given county would seek care at the closest VA hospital, determined by measuring the straight-line mileage between the population centers of the given county and the county that includes the site of the new or the existing VA hospital By definition, then, the counties in this service area were closer to Mobile than to an existing VA hospital

Counties Included by GAO in Hospital Service Area for Okaloosa County if Hospital Also Is Established in Mobile

County	Projected veteran population (year 2000)
Baldwin, AL	a
Coffee, AL	3,770
Conecuh, AL	840
Covington, AL	3,340
Escambia, AL	2,570
Geneva, AL	1,760
Houston, AL	7,270
Monroe, AL	a
Bay, FL	14,060
Calhoun, FL	600
Escambia, FL	35,070
Franklin, FL	880
Gadsden, FL	2,970
Gulf, FL	1,010
Holmes, FL	1,370
Jackson, FL	3,390
Liberty, FL	520
Okaloosa, FL	22,460
Santa Rosa, FL	8,820
Walton, FL	3,530
Washington, FL	1,720
Decatur, GA	2,090
Seminole, GA	640
Total	**118,680**

[a]County shifted to hospital service area for Mobile because it was closer to Mobile than to Okaloosa This county would be included in Okaloosa County's service area were Mobile not an option because it is closer to Okaloosa than to an existing VA hospital

Note In establishing hospital service areas, we assumed that all veterans living in a given county would seek care at the closest VA hospital, determined by measuring the straight-line mileage between the population centers of the given county and the county that includes the site of the new or the existing VA hospital By definition, then, the counties in this service area were closer to Okaloosa County than to Mobile or an existing VA hospital

Counties Included by GAO in Hospital Service Area for Mobile if Hospital Also Is Established in Okaloosa County

County	Projected veteran population (year 2000)
Baldwin, AL	11,050
Choctaw, AL	1,240
Clarke, AL	1,920
Escambia, AL	a
Mobile, AL	35,610
Monroe, AL	1,600
Washington, AL	1,100
Escambia, FL	a
Okaloosa, FL	a
Santa Rosa, FL	a
George, MS	1,170
Greene, MS	490
Wayne, MS	1,410
Total	**55,590**

[a]County shifted to hospital service area for Okaloosa County because it was closer to Okaloosa than to Mobile This county would be included in Mobile's service area were Okaloosa County not an option because it was closer to Mobile than to an existing VA hospital

Note In establishing hospital service areas, we assumed that all veterans living in a given county would seek care at the closest VA hospital, determined by measuring the straight-line mileage between the population centers of the given county and the county that includes the site of the new or the existing VA hospital By definition, then, the counties in this service area were closer to Mobile than to Okaloosa County or an existing VA hospital

VA's Initial Cost Estimate and Assumed Construction Schedule for New 174-Bed Hospital in Okaloosa County

Table V.1: VA's Initial Cost Estimate for Hospital in Okaloosa County

Item	Cost
Construction, 267,612 gross square feet @ $98 53[a]	$26,368,000
Utilities and site work[b]	2,668,000
Parking (surface) for 200 cars @ $400	80,000
Parking (structure) for 200 cars @ $9,000	1,800,000
Total current base construction cost	**30,916,000**
Inflation projected to December 1990	6,208,000
Contingencies	3,712,000
Technical services	3,917,000
Total construction cost	**44,753,000**
Site acquisition cost for 10 acres	1,000,000
Utility and other agreements	1,000,000
Estimated total project cost	**$47,000,000[c]**

[a]The $98 53 per gross square foot for new construction was based on the low bids to VA for Albuquerque, Portland, Minneapolis, Richmond, and Bay Pines, Florida, replacement hospitals VA adjusted the cost figure for time and location to Pensacola, which is in the Florida Panhandle (See p 23 for discussion of cost figure)

[b]Cost for utilities and site work was based on a percentage derived from the above listed bids

[c]Rounded

Table V.2: VA's Assumed Construction Schedule for Hospital in Okaloosa County

Phase	Date
Award architect/engineering contract	February 1987
Complete conceptual plans	June 1987
Complete environment impact study and land acquisition	October 1987
Award preliminary design contract	October 1987
Complete preliminary design	July 1988
Award working drawings contract	October 1989
Complete design	August 1990
Award construction contract	December 1990
Complete construction	June 1993
Funding	
Land acquisition	FY 1988
Design	FY 1990
Construction	FY 1991

Note This is VA's estimated construction schedule on which VA based its cost estimate VA assumed that conceptual plans would be developed concurrently with the environmental impact study and land acquisition, both starting in August 1986

VA's Initial Cost Estimate and Assumed Construction Schedule for Acquiring and Renovating Providence Hospital in Mobile as a 164-Bed Facility

Table VI.1: VA's Initial Cost Estimate for Acquiring and Renovating Providence Hospital

Item	Cost
Renovate 338,367 gross square feet @ $70 93[a] [b]	$24,002,000
Electrical utilities	226,000
Elevators	1,150,000
Renovate vacant space, 102,259 gross square feet @ $45 30[b] [c]	4,632,000
Total current base construction cost	**30,010,000**
Inflation projected to December 1990	6,026,000
Contingencies	3,604,000
Technical services	3,802,000
Total construction cost	**43,000,000[d]**
Acquisition cost, 1983 appraised value	24,000,000
Estimated total project cost[e]	**$67,000,000**

[a]Renovation costs include gutting the interior to the extent necessary Renovation of 338,367 gross square feet included replacing the heating, ventilation, and air-conditioning system and modifying the electrical system to meet current codes (VA's assumptions concerning the proposed renovations are presented on p 27)

[b]The cost per gross square foot figure was based on the low bids to VA for five recent replacement hospitals (See p 23 for discussion of cost figures)

[c]Renovation of the vacant space, 102,259 gross square feet, was intended to correct code violations Vacant space is defined as the space in Providence Hospital not needed by VA to support a 164-bed hospital Alterations included changes to the heating, ventilation, and air-conditioning and electrical systems

[d]Rounded

[e]The estimated total project cost does not include money for possible asbestos-abatement measures As the extent of asbestos was unknown, VA was unable to provide a cost for removing it

Table VI.2: VA's Assumed Construction Schedule for Acquiring and Renovating Providence Hospital

Phase	Date
Award architect/engineering contract	February 1987
Complete conceptual plans	August 1987
Award preliminary design contract	December 1987
Complete preliminary design	June 1988
Award working drawings contract	October 1989
Complete design	August 1990
Award construction contract	December 1990
Complete construction	December 1992
Funding	
Design	FY 1990
Construction	FY 1991

Note This is VA's estimated construction schedule on which it based its cost estimate VA assumed that work on this project started in August 1986

VA's Initial Cost Estimate and Assumed Construction Schedules for New Hospital in Okaloosa County and Acquiring and Renovating Providence Hospital in Mobile

Table VII.1: VA's Initial Cost Estimate for Both Hospitals

Item	Cost
Purchase and Renovation of Providence Hospital for Use as 96-bed Hospital	
Renovate 294,206 gross square feet @ $70 93[a] [b]	$20,868,000
Electrical utilities	226,000
Elevators	1,150,000
Renovate vacant space, 146,420 gross square feet @ $45 30[b] [c]	6,633,000
Total current base construction cost	**28,877,000**
Inflation projected to December 1990	5,799,000
Contingencies	3,468,000
Technical services	3,659,000
Total construction cost	**42,000,000[d]**
Acquisition cost, 1983 appraised value	24,000,000
Estimated total project cost[e]	**66,000,000**
New Hospital Construction for 159-bed Hospital in Okaloosa County	
Construction 244,542 gross square feet @ $98 53[b]	24,095,000
Utilities and site work	2,438,000
Parking (surface) for 183 cars @ $400	73,000
Parking (structure) for 183 cars @ $9,000	1,647,000
Total current base construction cost	**28,253,000**
Inflation projected to December 1990	5,673,000
Contingencies	3,393,000
Technical services	3,580,000
Total construction cost	**40,899,000**
Site acquisition cost for 10 acres	1,000,000
Utility and other agreements	1,000,000
Estimated total project cost	**$43,000,000[d]**
Grand total project cost	**$109,000,000**

[a]Renovation costs included gutting of the interior to the extent necessary Renovation of 294,206 gross square feet included replacing the heating, ventilation, and air-conditioning system and modifying the electrical system to meet current codes (VA's assumptions concerning the proposed renovations are presented on p 27)

[b]The cost per gross square foot figure was based on the low bids to VA for five recent replacement hospitals (See p 23 for discussion of cost figures)

[c]Renovation of the vacant space, 146,420 gross square feet, was intended to correct code violations Vacant space is defined as the space in Providence Hospital not needed by VA to support a 96-bed hospital Alterations included changes to the heating, ventilation, and air-conditioning and electrical systems

[d]Rounded

[e]Project cost does not include money for possible asbestos-abatement measures

Table VII.2: VA's Assumed Construction Schedules for Both Hospitals

Phase	Date	
	For alteration of hospital at Mobile	For new hospital construction at Okaloosa County
Award architect/engineering contract	February 1987	February 1987
Complete conceptual plans	August 1987	June 1987
Complete environment impact study and land acquisition	•	October 1987
Award preliminary design contract	December 1987	October 1987
Complete preliminary design	June 1988	July 1988
Award working drawings contract	October 1989	October 1989
Complete design	August 1990	August 1990
Award construction contract	December 1990	December 1990
Complete construction	December 1992	June 1993
Funding for construction		
Land acquisition	•	FY 1988
Design	FY 1990	FY 1990
Construction	FY 1991	FY 1991

Note These are VA's estimated construction schedules for both facilities on which VA based its cost estimate VA assumed that work on these projects started in August 1986

VA's Rationale for Establishing Hospital Service Areas for the Proposed Hospitals

To determine appropriate workloads for its hospitals, VA establishes service areas. For an existing VA hospital, VA bases the service area on actual veteran usage of the hospitals. When establishing service areas for new hospitals where no usage data exist, however, planners make judgments about where veterans in nearby counties will travel for health care.

VA had no written guidance for determining hospital service areas when its planners established service areas in 1983 and 1984 for potential hospitals in Mobile and Okaloosa County, according to VA central office and Medical District 10 officials. But for planning purposes, they said, counties whose population centers were closer to the new hospital site than to an existing hospital were initially assumed to fall within the new hospital service area. Then, using such factors as local knowledge of the highway systems and where veterans work and shop, planners predicted where veterans in specific counties would go for care and adjusted the service area by including or excluding certain counties. It is impossible to make such predictions with certainty, VA planners noted. Only one county was assigned to a service area in exception to this general procedure (see p. 49).

Establishing a Service Area for Okaloosa County

VA's study to locate a hospital in Okaloosa County stemmed from language accompanying Public Law 97-101, which directed VA to study the demand for VA health care services in Florida. VA's Final Report on Future Bed Need and Potential Sites for New VA Hospitals in Florida (June 1983) recommended that a new VA hospital be located in the Florida Panhandle. In September 1983, Medical District 10 recommended that the Panhandle hospital be located in Okaloosa County and established a hospital service area consisting of 18 counties in Florida, Georgia, and Alabama. VA's current projection (made in 1986) of the veteran population for these counties for the year 2000 was 106,800. (VA used 2000 as its target planning year for determining appropriate sizes for its facilities.) The counties (and their projected veteran populations) included by VA in the service area for a potential hospital located in Okaloosa County are shown in table VIII.1.

Table VIII.1: Hospital Service Area Established by VA in 1983 for an Okaloosa County Facility

County	Projected veteran population (year 2000)
Covington, AL	3,340
Escambia, AL	2,570
Geneva, AL	1,760
Bay, FL	14,060
Calhoun, FL	600
Escambia, FL	35,070
Franklin, FL	880
Gadsden, FL	2,970
Gulf, FL	1,010
Holmes, FL	1,370
Jackson, FL	3,390
Liberty, FL	520
Okaloosa, FL	22,460
Santa Rosa, FL	8,820
Walton, FL	3,530
Washington, FL	1,720
Decatur, GA	2,090
Seminole, GA	640
Total	**106,800**

All 18 counties included in the hospital service area were closer to Okaloosa County than to existing VA hospitals. Five Alabama counties that were closer to Okaloosa County were, however, excluded from the service area. The five counties ranged from 2 to 11 miles closer to Okaloosa and had a total projected veteran population of 24,530. The comparative distances from these counties to the existing and proposed hospitals are shown in table VIII.2.

Table VIII.2: Comparative Distances to Proposed and Existing VA Hospitals for Counties Excluded From Okaloosa County's Hospital Service Area

		Miles from		
County	Veteran population (year 2000)	Existing hospital	Proposed Okaloosa facility	Difference (miles)
Houston, AL	7,270	95	85	10
Coffee, AL	3,770	71	69	2
Conecuh, AL	840	77	66	11
Monroe, AL	1,600	85	83	2
Baldwin, AL	11,050	77	71	6
Total	**24,530**			

Houston, Coffee, Conecuh, and Monroe Counties were excluded from the Okaloosa County hospital service area, district planners told us, because they had better road systems leading to the VA hospital in Montgomery, Alabama, than to Okaloosa County—basically four- versus two-lane highways. The planners excluded Baldwin County, they said, because (1) it was part of Mobile's metropolitan statistical area and they did not want to split the area and (2) veterans from that county worked and shopped in Mobile and would go to the same VA hospital (in Biloxi, Mississippi) as veterans from Mobile.

Establishing a Service Area for Mobile

VA central office planners established a hospital service area for Mobile using essentially the same methodology as the district planners used for Okaloosa. After Medical District 10's study recommended that the Florida Panhandle hospital be located in Okaloosa County, VA was asked to consider the feasibility of purchasing a private hospital in Mobile for use as a VA facility. In response to questions from the staff of the House Committee on Veterans' Affairs, VA prepared a report, Potential Size and Impact of a Medical Center in Mobile, Alabama (May 1984). In this report, central office planners established for Mobile a hospital service area consisting of nine counties in Alabama and Florida. In doing so, the planners relied on information provided by district planners and assumed that a VA hospital would be built in the Panhandle. VA's current projection (made in 1986) of the veteran population for these nine counties in the year 2000 was 98,580. The counties (and their projected veteran populations) included by VA in the hospital service area for Mobile are shown in table VIII.3.

Table VIII 3: Hospital Service Area for Mobile, Established by VA in 1984

County	Projected veteran population (year 2000)
Baldwin, AL	11,050
Conecuh, AL	840
Clarke, AL	1,920
Escambia, AL	2,570
Mobile, AL	35,610
Monroe, AL	1,600
Washington, AL	1,100
Escambia, FL	35,070
Santa Rosa, FL	8,820
Total	**98,580**

Five counties that were closer to Mobile than to existing VA hospitals were excluded from the service area. The five counties excluded ranged from 12 to 33 miles closer to Mobile and had a total projected veteran population of 26,770. The comparative distances from these counties to the existing and proposed hospitals are listed in table VIII.4.

Table VIII.4: Comparative Distances to Proposed and Existing VA Hospitals for Counties Excluded From Mobile's Hospital Service Area

County	Veteran population (year 2000)	Miles from Existing hospital	Miles from Proposed Okaloosa facility	Difference (miles)
Greene, MS	490	59	47	12
George, MS	1,170	42	30	12
Wayne, MS	1,410	89	73	16
Choctaw, AL	1,240	118	92	26
Okaloosa, FL	22,460	127	94	33
Total	**26,770**			

A district planner excluded Greene, George, and Wayne Counties from Mobile's service area, he said, because they were in Mississippi and he believed that veterans from these counties would be more likely to seek services within the state. Historically, veterans are more likely to go to VA hospitals in their own state when distance is not a major factor, according to VA's district planners. For example, based on actual veteran usage, VA included two Mississippi counties in the service area for the VA hospital in Jackson, Mississippi, although they were closer to the VA hospital in Birmingham, Alabama. One county was 44 miles closer to Birmingham. VA data for 1984 showed that 16 patients from this county went to Birmingham, while 141 traveled to Jackson. For the other county, 9 miles closer to Birmingham, VA data showed that 1 patient went to Birmingham while 60 traveled to Jackson.

The district planner also excluded Choctaw County, Alabama, from Mobile's service area, he told us, because veterans generally worked and shopped in the Selma and Montgomery areas and he believed that these veterans would continue to use the VA hospital in Montgomery.

Central office planners excluded Okaloosa County from Mobile's service area when they prepared VA's May 1984 report on the potential for establishing a VA hospital in Mobile. Although the report was based on the assumption that VA would build a separate facility to serve the Florida Panhandle, a planner told us that he was unaware of where in the Panhandle the new facility would be located. Wherever VA decided to

locate the Panhandle hospital, he said, veterans in Okaloosa County would be closer to that location than to the hospital in Mobile. (Okaloosa County would be included in the hospital service area for Mobile, VA planners acknowledged, if no plans existed for building a new hospital in the Panhandle.)

In establishing a potential service area for the hospital in Mobile, VA central office planners included three counties (Escambia, Alabama, and Escambia and Santa Rosa, Florida) that were also included in the potential service area for a hospital in the Panhandle. According to a planner, this was done to acknowledge that VA's potential purchase of the Providence Hospital in Mobile would affect the location and size of a potential VA hospital in the Panhandle. Establishing a medical center in Mobile would require that the Panhandle hospital be located in the eastern sector of the Panhandle, farther from Mobile, the planner said. Since he did not know specifically where the Panhandle hospital would be located, he was unable to strictly apply the distance criteria. If the location of the Panhandle hospital remained in Okaloosa County, these three counties would be more appropriately included in the service area for the Panhandle hospital because they were closer to Okaloosa than Mobile. But veterans from Escambia County, Alabama, which was only 2 miles closer to Okaloosa than to Mobile, might seek care at Mobile because of state affiliation.

Central office planners included Conecuh County, Alabama (with a projected veteran population of 840), in Mobile's service area even though it was 7 miles closer to the VA hospital in Montgomery, Alabama. A VA hospital in Mobile would attract veterans from Conecuh County only, a district planner said, if the hospital were large enough to provide a broader range of services than are provided by small hospitals. A VA hospital in Mobile would be large enough to provide a broader range of services, he felt, if it would serve the Panhandle as well as southern Alabama. However, when establishing the service area for Mobile, central office planners assumed that a VA hospital would be established in the Panhandle. Consequently, including Conecuh County in Mobile's service area was inconsistent with this assumption.

Comments From the Veterans Administration

Office of the
Administrator
of Veterans Affairs

Washington DC 20420

Veterans
Administration

MAR 30 1987

Mr. Richard L. Fogel
Assistant Comptroller General
Human Resources Division
U.S. General Accounting Office
Washington, DC 20548

Dear Mr. Fogel:

This responds to your request that the Veterans Administration (VA) review and comment on the General Accounting Office (GAO) February 24, 1987, draft report Building Hospital in Florida More Cost-Effective than Buying One in Mobile.

We have reviewed the draft report and agree with GAO's conclusion that building a VA hospital in the Florida Panhandle would be more cost-effective than purchasing and renovating a hospital in Mobile.

Sincerely,

THOMAS K. TURNAGE
Administrator

*U S G P O 1987-181-235:60003

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