REPORT TO THE SUBCOMMITTEE ON EXECUTIVE REORGANIZATION AND GOVERNMENT RESEARCH
090544
COMMITTEE ON GOVERNMENT OPERATIONS UNITED STATES SENATE

Planning, Construction, And Use Of Medical Facilities In The Denver, Colorado, Area

B-167966

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BY THE COMPTROLLER GENERAL OF THE UNITED STATES

090544

NOV. 16, 1971

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

B-167966

Dear Mr. Chairman:

This is our report on the planning, construction, and use of medical facilities in the Denver, Colorado, area. The review was made pursuant to your request of September 18, 1969.

The responsible Federal, State, and local health organizations have not been given an opportunity to formally examine and comment on this report, although most of the matters were discussed with their representatives during the review.

We plan to make no further distribution of this report unless copies are specifically requested, and then we shall make distribution only after your agreement has been obtained.

Sincerely yours,

Comptroller General
of the United States

The Honorable Abraham A. Ribicoff, Chairman
Subcommittee on Executive Reorganization
and Government Research
Committee on Government Operations
United States Senate

COMPTROLLER GENERAL'S REPORT
TO THE SUBCOMMITTEE ON
EXECUTIVE REORGANIZATION
AND GOVERNMENT RESEARCH
COMMITTEE ON GOVERNMENT OPERATIONS
UNITED STATES SENATE

PLANNING, CONSTRUCTION, AND USE OF MEDICAL FACILITIES IN THE DENVER, COLORADO, AREA B-167966

D I G E S T

WHY THE REVIEW WAS MADE

At the request of the Chairman, Subcommittee on Executive Reorganization and Government Research, Senate Committee on Government Operations, the General Accounting Office (GAO) examined into the coordination among Federal and State agencies and local health organizations in planning and constructing acute-care hospitals and skilled-nursing-care facilities in certain metropolitan areas.

GAO also reviewed the extent to which certain medical facilities and services were shared among hospitals.

The reviews were made in Baltimore, Maryland; Cincinnati, Ohio; Denver, Colorado; Jacksonville, Florida; San Francisco, California; and Seattle, Washington. These areas were selected on the basis of geographic distribution and of the levels of Federal financial participation in the construction of hospitals and skilled-nursing-care facilities. GAO did not review the quality of care being provided by hospitals and skilled-nursing-care facilities. This report presents the results of GAO's review in the Denver area.

Federal, State, and local health organizations have not been given an opportunity to formally examine and comment on the contents of this report.

FINDINGS AND CONCLUSIONS

Background

The Hospital and Nursing Home Division of the Colorado Department of Health (State agency) administers grants made under title VI of the Public Health Service Act (42 U.S.C. 291), commonly known as the Hill-Burton program, by the Public Health Service (PHS) of the Department of Health, Education, and Welfare (HEW) for the construction and modernization of hospitals and other medical facilities.

The State agency annually prepares a plan setting forth an estimate of the number of acute-care hospital beds and skilled-nursing-care beds needed for the next 5 years. Although GAO verified the mathematical accuracy of the State agency's computation of future bed needs, GAO did not evaluate the appropriateness of the methodology prescribed by PHS for use by the State planners in determining future bed needs. (See p. 8)

NOV. 16, 1971

Tear Sheet

Need for hospital beds

Hospital bed capacity in the Denver area was increasing, although the occupancy rates for many hospitals were low. According to the 1971 State plan, the Denver area will need 5,770 hospital beds by 1975. As of December 31, 1970, facilities for 5,851 beds were in operation or under construction in the Denver area. By 1975 the capacity, estimated by GAO on the basis of plans for future construction, will be about 6,642 beds, or about 872 beds more than the projected need. (See p. 8.)

Of the 18 non-Federal hospitals in the Denver area, 12 had 1,194 beds in use or available for use, which complied with State licensing requirements but which did not fully conform to Hill-Burton construction standards. A State agency inspector advised GAO that, in his opinion, the 12 facilities containing the nonconforming bed spaces were safe for patient care. (See p. 8.)

Need for skilled-nursing-care facilities

The Denver area has more skilled-nursing-care beds than it may need by 1975.

According to the 1971 State plan, the Denver area will need 5,984 skilled-nursing-care beds by 1975. As of December 31, 1970, facilities for 6,698 beds were in operation or under construction. By 1975 the capacity, estimated by GAO on the basis of plans for future construction, will be about 9,254 beds, or about 3,270 more beds than the projected need. (See p. 12.)

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Control over development of medical facilities

If a proposed hospital or skilled-nursing-care facility is to be financed with a Hill-Burton grant, the State agency must determine that the project is needed before the grant can be made. The Federal Housing Administration and the Small Business Administration have instituted procedures recently whereby they will not provide financial assistance to a proposed project unless the State agency has issued a certificate of need. (See p. 14.)

When the Federal Government is not involved in the financing of the construction of facilities, State agencies charged with the responsibility for planning new hospitals and skilled-nursing-care facilities do not have the authority to ensure that only needed facilities are constructed. (See p. 14.)

Sharing of medical facilities

Sharing of specialized services, such as cobalt therapy and open-heart surgery, can result in hospital care at less cost. There is some sharing of specialized medical services in the Denver area. (See pp. 17 to 21.) Some Denver area hospitals have initiated projects to reduce operating costs and to provide more effective service through cooperative programs, such as group purchasing and the sharing of administrative services. (See pp. 22 to 25.)

Recent legislation--Public Law 91-296--increases Federal financial participation in projects involving the sharing of health services. This legislation should provide hospitals which are seeking Federal grant funds with an incentive to share services.

Contents

ABBREVIATIONS

COPAC	Commodities Purchasing Association of Colorado
GAO	General Accounting Office
HEW	Department of Health, Education, and Welfare
PHS	Public Health Service
VA	Veterans Administration

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CHAPTER 1

INTRODUCTION

HILL-BURTON PROGRAM

Title VI of the Public Health Service Act (42 U.S.C. 291), commonly known as the Hill-Burton program, authorizes the Public Health Service of the Department of Health, Education, and Welfare to make grants to States for the construction of medical facilities. PHS, under the Hill-Burton program, requires each State to designate a single agency to administer the program and to prepare a State plan annually, projecting for each designated service area of the State the need for medical facilities and comparing that projected need with the resources expected to exist.

The Hospital and Nursing Home Division of the Colorado Department of Health is the State agency responsible for administering the Hill-Burton program in Colorado. The State agency annually prepares a plan setting forth an estimate of the number of acute-care hospital beds and skilled-nursing-care beds needed for the next 5 years. Separate estimates are made for each service area within the State.

The basic data used by the State agency to estimate the need for hospitals and skilled-nursing-care facilities consists of current and projected population data furnished by the Bureau of the Census and of hospital and skilled-nursing-care facility utilization data, expressed in terms of patient-days during the most recent year, furnished by the hospitals and the facilities. The PHS guidelines for preparing the State plan do not require that PHS, Veterans Administration (VA), or military facilities be considered in the planning process, nor do they require that the days of care rendered in these facilities be considered.

To arrive at an estimated average daily census of patients, the State agency multiplies the projected population by the current use rate (the number of days of inpatient care in the most recent year for each 1,000 population) and divides the result by 365. The resulting average daily

census is divided by 80 percent for hospitals and 90 percent for skilled-nursing-care facilities to arrive at an estimate of beds needed, assuming an 80-percent occupancy rate for hospitals and a 90-percent occupancy rate for skilled-nursing-care facilities. This provides an estimated 20- or 10-percent vacancy rate to meet emergencies. An extra 10 beds are added to the estimated number of hospital beds needed as an additional precaution to ensure that emergency patients can be treated.

A total of about $7.2 million in Hill-Burton funds was allotted to the State of Colorado in fiscal years 1968 through 1970. About $6.6 million, or 92 percent, of these funds had been encumbered at June 30, 1970. About $1.4 million of the encumbered funds, or 21 percent, were granted to projects in the Denver area.

DENVER AREA HEALTH COMPLEX

The State agency has divided the State into 24 service areas. According to PHS regulations a service area is:

> "The geographic territory from which patients come or are expected to come to existing or proposed hospitals *** or medical facilities ***."

The Denver area includes Adams, Arapahoe, Clear Creek, Douglas, Gilpin, and Jefferson Counties; the city and county of Denver; and the western half of Elbert County. About 50 percent of the State's population resides in this service area. In designating service areas, the State agency considers travel time and distance, geographic barriers, population, and other factors.

There are 20 hospitals and 55 skilled-nursing-care facilities in the Denver area. Of the 20 hospitals, two are operated by the Federal Government--one by VA and the other by the U.S. Army (Fitzsimons General Hospital). The map on page 7 shows the location of hospitals in the Denver area.

Generally there are two types of nursing-care facilities: (1) those which provide care for convalescent or chronic-disease patients requiring skilled nursing care and

which are under the general direction of persons licensed to practice medicine or surgery in the State and (2) those which provide domiciliary care. Only the facilities providing skilled nursing care qualify for Hill-Burton grants. Our review included only those facilities providing skilled nursing care.

OTHER HEALTH-PLANNING ORGANIZATIONS

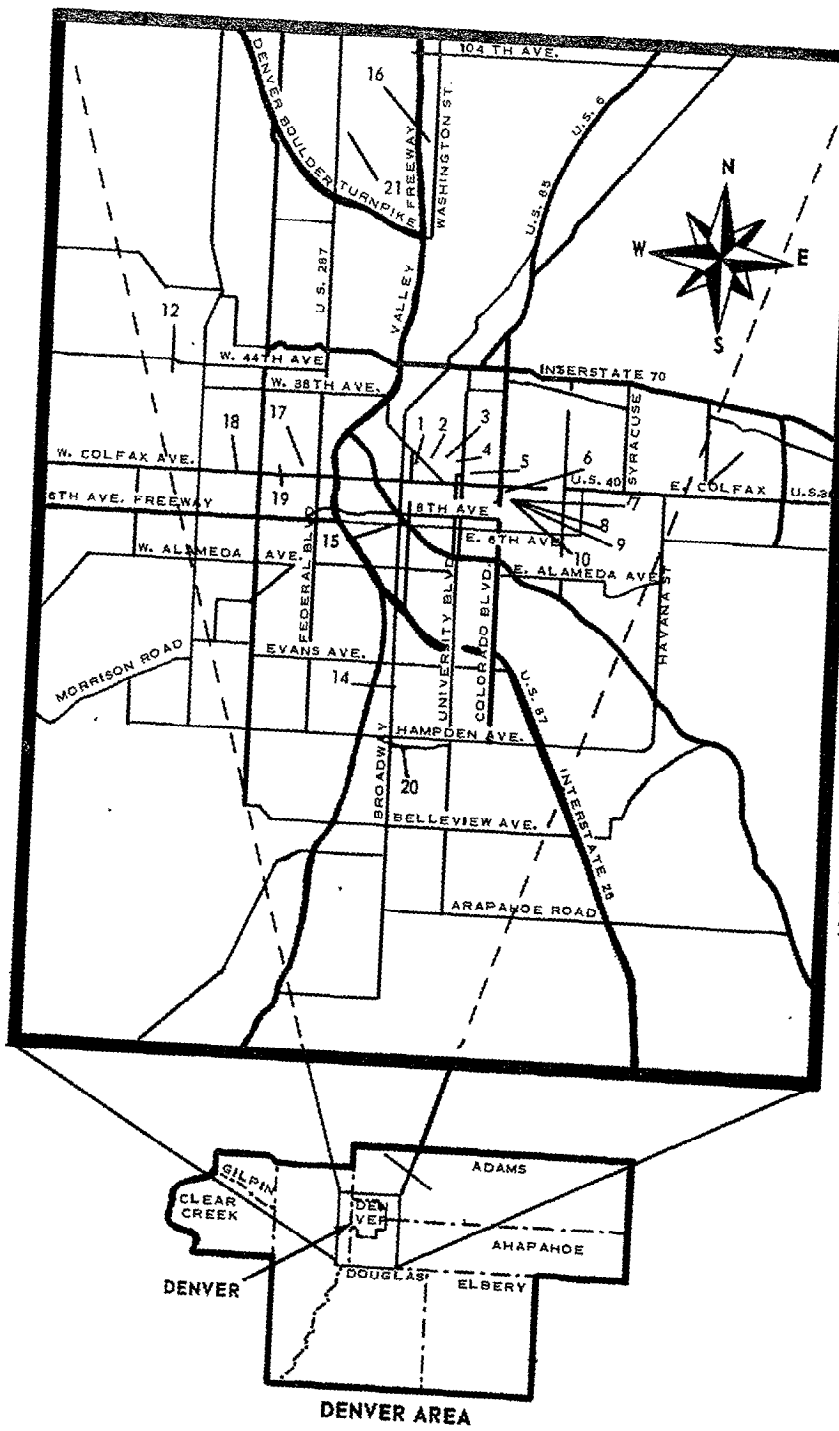
Public Law 89-749, approved November 3, 1966, created the Partnership for Health Program which introduced the concept of comprehensive health planning. Under this new type of planning, it is envisioned that both providers and consumers of health services will participate in identifying health needs and resources, in establishing priorities, and in recommending courses of action.

The Colorado Office of Comprehensive Health Planning, a division of the State Planning Office, is responsible for administering and coordinating comprehensive health planning at the State level.

The Central Area Health Planning Association, Inc., was incorporated in January 1968 with the intention of becoming the comprehensive health-planning agency for the Denver area. The association, however, was unable to obtain necessary funding and staff to become an operational comprehensive health-planning agency.

Subsequently the association joined with the Medical Technical Advisory Committee of the Denver Regional Council of Governments to form the Interim Advisory Council for Comprehensive Health Planning with the primary objective of developing an application to the Colorado Office of Comprehensive Health Planning to establish a comprehensive health-planning agency for the Denver area. At the time of our fieldwork, the interim advisory council had not completed its application.

MAP OF HOSPITALS IN DENVER AREA



KEY

1. ST. LUKE'S HOSPITAL
2. CHILDREN'S HOSPITAL
3. ST. JOSEPH HOSPITAL
4. PRESBYTERIAN MEDICAL CENTER
5. MERCY HOSPITAL
6. NATIONAL JEWISH HOSPITAL
7. COLORADO GENERAL HOSPITAL
8. VETERANS ADMINISTRATION HOSPITAL
9. GENERAL ROSE MEMORIAL HOSPITAL
10. ROCKY MOUNTAIN OSTEOPATHIC HOSPITAL
11. FITZSIMONS GENERAL HOSPITAL (ARMY)
12. LUTHERAN HOSPITAL AND MEDICAL CENTER
13. BRIGHTON COMMUNITY HOSPITAL
14. PORTER MEMORIAL HOSPITAL
15. DENVER GENERAL HOSPITAL
16. VALLEY VIEW HOSPITAL AND MEDICAL CENTER
17. BETH ISRAEL HOSPITAL
18. AMERICAN MEDICAL CENTER
19. ST. ANTHONY'S HOSPITAL
20. SWEDISH HOSPITAL
21. ST. ANTHONY HOSPITAL NORTH (UNDER CONSTRUCTION)

CHAPTER 2

PLANNING AND CONSTRUCTION OF HOSPITALS

According to the 1971 State plan prepared by the State agency, the Denver area will need 5,770 hospital beds by 1975. The bed capacity of non-Federal hospitals in the Denver area as of December 31, 1969, was 5,667 beds, or 103 beds less than the projected need. As of December 31, 1970, facilities for 5,851 beds were in operation or under construction. We estimated that, if current plans of hospital officials were carried out, the total bed capacity by 1975 would be increased to 6,642 beds, or 872 beds in excess of the need projected in the State plan.

Of the 18 non-Federal hospitals in the Denver area, 12 had 1,194 beds in use or available for use, which complied with State licensing requirements but which did not fully conform to Hill-Burton construction standards. Most of the 1,194 beds did not conform because the buildings in which the beds were located did not meet certain safety requirements of the Hill-Burton construction standards. A State agency inspector advised us, however, that, in his opinion, the 12 facilities containing the nonconforming bed spaces were safe for patient care.

PHS regulations require that nonconforming bed spaces be considered in determining whether the number of beds in facilities in operation or under construction is sufficient to meet current and future bed requirements. The State plan recognized that the 1,194 nonconforming bed spaces were available to meet current and future patient-care requirements.

We noted that hospital bed capacity in the Denver area was increasing, although the occupancy rates for many hospitals were low. We estimated that the occupancy rates for Denver area hospitals averaged about 74 percent during 1969.

PLANNED CHANGES IN BED CAPACITY OF HOSPITALS

In accordance with PHS regulations for including facilities in the State plan to meet the need for beds for the next 5 years, the State agency does not consider planned

increases or decreases in bed capacity--only facilities under construction. Therefore we interviewed hospital officials and local planning officials to determine plans for increasing or decreasing hospital bed capacity.

We were informed that 11 hospitals planned to increase their total bed capacity by 1,147 beds by 1975 and that two hospitals planned to reduce their total bed capacity by 172 beds, or a net increase of 975 beds. With regard to the planned increase of 1,147 beds, nine hospitals planned to expand their existing facilities and two hospitals were constructing, or planned to construct, satellite facilities in suburban Denver.

Following is our analysis of the projected changes in bed capacity--planned or under construction--in the Denver area by 1975.

Community and hospital	Bed capacity at December 31, 1969	Increase or decrease(-) in beds in 1970 (note a)	Bed capacity at December 31, 1970	Planned increase or decrease(-) in beds from 1971 to 1975	Projected bed capacity for 1975
Aurora:					
Presbyterian Medical Center	-	-	-	138	138
Brighton:					
Brighton Community	69	-	69	-	69
Denver:					
Beth Israel	140	-	140	100	240
Children's	213	-	213	-	213
Colorado General	379	-	379	-	379
Denver General	354	-98	256	-	256
General Rose Memorial	417	-	417	128	545
Mercy	416	-	416	6	422
National Jewish	189	-	189	65	254
Porter Memorial	245	-	245	-	245
Presbyterian Medical Center	498	-	498	-	498
Rocky Mountain Osteopathic	188	-	188	-	188
St. Anthony's	595	-	595	-74	521
St. Joseph	621	-	621	-	621
St. Luke's	453	-	453	28	481
Edgewater:					
American Medical Center	81	-	81	100	181
Englewood:					
Swedish	280	-	280	150	430
Thornton:					
Valley View	252	-	252	150	402
Westminster:					
St. Anthony Hospital North	-	115	115	-	115
Wheat Ridge:					
Lutheran	277	167	444	-	444
Total	5,667	184	5,851	791	6,642

[a]Under construction or completed in 1970.

UTILIZATION OF EXISTING HOSPITAL BEDS

To measure the utilization of existing hospitals in the Denver area, we computed the occupancy rate for each of the 18 non-Federal hospitals. On the basis of the average daily patient loads (patient-days divided by 365) of hospitals in the area during calendar year 1969, we estimated that the average occupancy rate for the non-Federal hospitals was about 74 percent. PHS guidelines prescribe an occupancy factor of 80 percent for use in computing the number of beds required in a service area.

The following table shows the bed capacities and the occupancy rates of the non-Federal hospitals in the Denver area.

Bed Capacities and Occupancy Rates

Denver Area Hospitals

Community and hospital	Capacity at January 1, 1970		Occupancy rate (note a)	
	Licensed (note b)	Survey (note c)	Percent of licensed capacity	Percent of survey capacity
Brighton:				
Brighton Community	69	69	61	61
Denver:				
Beth Israel	144	140	86	89
Children's	221	213	57	59
Colorado General	450	379	72	82
Denver General	311	354	78	64
General Rose Memorial	400	417	86	83
Mercy	368	416	84	75
National Jewish	180	189	88	83
Porter Memorial	264	245	77	83
Presbyterian Medical Center	476	498	68	65
Rocky Mountain Osteopathic	177	188	70	66
St. Anthony's	555	595	70	65
St. Joseph	534	621	87	75
St. Luke's	466	453	81	84
Edgewater:				
American Medical Center	85	81	70	73
Englewood:				
Swedish	252	280	76	68
Thornton:				
Valley View	184	252	89	65
Wheat Ridge:				
Lutheran	280	277	91	92
	5,416	5,667	77	74

[a] Based on occupancy statistics for calendar year 1969.

[b] Licensed beds represent the maximum number of beds that the State authorized the hospital to use.

[c] Survey beds represent the available capacity determined by the State agency by applying the PHS formula. This determination is based primarily on a minimum requirement standard of square footage of usable floor space for each bed. Minimum required square footage is defined as 100 square feet for each bed in a single room and as at least 80 square feet for each bed in a multibed room.

FEDERAL HOSPITALS

VA and the U.S. Army each operate a hospital in the Denver area. The VA hospital is a general medical and surgical hospital having a 484-bed capacity. During calendar year 1969 the occupancy rate of the VA hospital was 70 percent.

The U.S. Army hospital, Fitzsimons General Hospital, has a capacity of 1,657 beds. During calendar year 1969 the occupancy rate of this hospital was 70 percent. Hospital officials informed us that plans for a 284-bed addition were being formulated.

CHAPTER 3

PLANNING AND CONSTRUCTION OF SKILLED-NURSING-CARE FACILITIES

According to the 1971 State plan, the Denver area will need 5,984 skilled-nursing-care beds by 1975. As of December 31, 1970, facilities for 6,698 beds were in operation or under construction. Local nursing-home and hospital officials had plans to increase the bed capacity of skilled-nursing-care facilities by 2,556 beds by 1975. If the plans of these officials are carried out, the capacity of skilled-nursing-care facilities in the Denver area by 1975 will total 9,254 beds. Therefore we estimate that by 1975 the Denver area may have 3,270 more skilled-nursing-care beds than the projected need of 5,984.

According to PHS guidelines skilled nursing care is the provision of 24-hour service sufficient to meet the total nursing needs of all patients. This includes the employment of at least one registered professional nurse responsible for the total nursing service and of a registered nurse or a licensed practical nurse in charge of each tour of duty.

Of the 55 skilled-nursing-care facilities in the Denver area, 10 had 616 beds in use or available for use, which complied with State licensing requirements but which did not fully conform to Hill-Burton construction standards. Most of the 616 beds did not conform because the facilities had not been constructed of fire-resistant materials or because certain structural elements of the facilities adversely affected the functioning of nursing and service units.

A State agency inspector informed us that, in his opinion, the facilities containing the nonconforming bed spaces were safe for patient care. The 1971 State plan stated that these bed spaces would require modernization to conform to Hill-Burton standards. The State plan also recognized, as required by PHS regulations, that these beds were available to meet current and future patient-care needs.

On the basis of patient-day statistics for calendar year 1969, we estimated that the occupancy rate for skilled-nursing-care facilities was 89 percent. An occupancy rate of 90 percent is prescribed in PHS regulations for use in computing the number of beds needed in a service area.

PLANNED CHANGES IN BED CAPACITY OF SKILLED-NURSING-CARE FACILITIES

In accordance with PHS regulations for including facilities in the State plan to meet the need for beds for the next 5 years, the State agency does not consider planned increases or decreases in bed capacity--only facilities under construction. We interviewed officials of 54 of the 55 skilled-nursing-care facilities in the Denver area to determine plans for increasing or decreasing bed capacity.

Our survey indicated that by 1975 the bed capacity of the area's skilled-nursing-care facilities might significantly exceed the need projected in the 1971 State plan. In the 1971 State plan, the State agency projected a total need for 5,984 beds in the area by 1975.

As of December 31, 1970, 5,836 skilled-nursing-care beds were in operation and facilities having a total capacity of 862 beds were under construction. Local nursing-home and hospital officials had plans to add 2,556 beds by 1975. We estimated that, if these plans were carried out, the total capacity of skilled-nursing-care facilities in the Denver area by 1975 would be increased to 9,254 beds, or 3,270 beds in excess of the 5,984 beds projected in the State plan.

CHAPTER 4

CONTROL OVER DEVELOPMENT OF MEDICAL FACILITIES

If a proposed hospital or skilled-nursing-care facility is to be financed with a Hill-Burton grant, the State agency must determine that the project is needed before the grant can be made. The Federal Housing Administration and the Small Business Administration have instituted procedures recently whereby they will not provide financial assistance unless the State agency has issued a certificate of need.

The certificate of need is issued by the State agency on the basis of the need for the medical facility as shown in the State plan. In this way the State agency can prevent Federal financial assistance for the construction of medical facilities which it considers to be in excess of the needs of an area. As discussed below, however, the State agency issued a certificate of need in February 1971 for a hospital for which the need was questionable.

If a proposed project is to be financed privately and if its design and specifications meet State construction standards, the State agency cannot disapprove the project even if the facilities will be in excess of projected needs. Also the Colorado Office of Comprehensive Health Planning, which is responsible for comprehensive health planning at the State level, has no effective means of preventing the construction of facilities in excess of projected needs; it can only recommend that construction not be undertaken and attempt to persuade project sponsors to curtail construction plans.

In 1969 a bill was introduced in the Colorado General Assembly, providing that a certificate of public necessity would be required for the construction of any new hospital or health facility to be licensed by the State Department of Health. A certificate of public necessity also would be required for the substantial modification of an existing hospital or health facility.

The bill provided that an application for a certificate of public necessity be made to the State Department of Health which, after eliciting the advice and recommendations of

local and State health-planning organizations, would determine whether the proposed facility was needed. The State Department of Health would not be permitted to license a new or modified facility if the facility had not first obtained a certificate of public necessity. The legislation was not enacted.

We believe that the lack of an effective means of preventing overconstruction can result in the construction of unneeded medical facilities in the Denver area. (See pp. 8 and 12.) Facilities in excess of needs result in underutilization of facilities, and underutilization generally results in higher operating costs for each patient-day. Since the Government reimburses hospitals and skilled-nursing-care facilities under the Medicare and Medicaid programs, the Government can be expected to share in the higher operating costs.

QUESTIONABLE ISSUANCE OF CERTIFICATE OF NEED FOR PROPOSED HOSPITAL

On December 2, 1970, the sponsors of a proposed 138-bed hospital in suburban Denver applied to the State agency for a certificate of need. The sponsors anticipated requesting the Federal Housing Administration to insure a mortgage of $4,133,263.

As discussed previously the Federal Housing Administration has instituted a procedure recently whereby it will not provide mortgage insurance unless the State agency has issued a certificate of need for a proposed facility. The decision to issue a certificate of need is based on a comparison of existing bed capacity of facilities (in service and under construction) in a service area at the time the certificate of need is being considered with the projected need shown in the State plan.

On February 18, 1971, the State agency issued a certificate of need for the proposed 138-bed hospital. The 1971 State plan, prepared on the basis of data as of December 31, 1969, showed that the Denver area needed 5,770 hospital beds by 1975. The plan showed also that 5,637 beds were in operation or under construction, or a net need of 133 additional beds. Because of an error, however, the

total number of beds under construction at one hospital was understated by 99 beds. Also construction of a 115-bed hospital began in July 1970 and should have been recognized by the State agency at the time the certificate of need was considered. Therefore, at the time the certificate of need for the proposed 138-bed hospital was issued, 5,851 beds were in operation or under construction, or 81 beds more than the projected 1975 need.

We brought this matter to the attention of the State agency and appropriate Federal officials. On March 31, 1971, the Regional Director, Region VIII, HEW, informed us that his staff was aware of the circumstances involved in the issuance of the certificate of need for the proposed 138-bed hospital and that his staff was working with the State agency to resolve this matter.

CHAPTER 5

COORDINATION AMONG ORGANIZATIONS FOR SHARING MEDICAL FACILITIES

In a report[1] by an advisory committee to the Secretary of Health, Education, and Welfare on hospital effectiveness, it was noted that one of the most promising opportunities for advances in hospital effectiveness might be expected to result from the combined efforts of health-care institutions, areawide planning agencies, and State licensing authorities to encourage and, when necessary, to demand the development of cooperative programs among institutions for the sharing of specialized medical services and facilities. The report stated that planning agencies and licensing authorities must make decisions for shared services on the basis of total effectiveness for the whole population rather than on the basis of institutional autonomy or the convenience of individual physicians.

Under the provisions of section 113 of Public Law 91-296, which amends the Public Health Service Act, States are entitled to receive Hill-Burton grant funds up to 90 percent of a project's cost if the project offers "potential for reducing health care costs through shared services among health care facilities" or "through interfacility cooperation." This legislation, which increases Federal financial participation in those projects which involve sharing, should provide hospitals which are seeking Federal grant funds with an incentive to share services.

We obtained information on the extent to which certain medical facilities and services were shared among the Denver area hospitals. Our review included cobalt and hemodialysis units, open-heart-surgery facilities, and obstetrical and pediatric beds. We also examined into the efforts of Denver

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[1] Secretary's Advisory Commission on Hospital Effectiveness, Report, (Washington, D.C.: U.S. Government Printing Office, 1968), pp. 15 and 16.

area hospitals to reduce operating costs through cooperative programs, such as group purchasing and the sharing of administrative services.

We noted that no authority existed which could control the establishment of these specialized services; consequently, any hospital could establish specialized services regardless of the potential for sharing existing facilities. We believe that controls should be established by State and local health-planning agencies over the number of specialized services to be developed in a community, to ensure that the needs of the medical community are met in the most economical and effective manner.

COBALT SERVICES

At the time of our fieldwork, six Denver area hospitals had seven cobalt machines in operation. The service of an eighth machine located at General Rose Memorial Hospital was discontinued in July 1969. The cost of each machine was estimated at $40,000, and the cost of each machine's energy source was estimated at an additional $40,000; the energy source has an approximate life of 4 years.

The following table shows utilization data for five of the seven cobalt machines as estimated by hospital officials. We did not obtain utilization data for equipment at two hospitals.

Hospital	Number of cobalt machines	Utilization rate
St. Anthony's	2	60% to 75%
St. Joseph	1	75
Colorado General	1	70
Fitzsimons General (Army)	1	41

Two Denver area hospitals provide cobalt therapy services to other hospitals. During calendar year 1969 VA paid the Colorado General Hospital $28,323 for 130 cobalt treatments provided to VA patients. An official of Presbyterian Medical Center informed us that the center provided Children's Hospital with approximately 34 cobalt treatments a month.

HEMODIALYSIS SERVICES

At the time of our fieldwork, seven non-Federal hospitals in the Denver area provided hemodialysis services. Fitzsimons General Hospital has three hemodialysis units. Three Denver area hospitals which did not provide hemodialysis services had plans, at the time of our fieldwork, to install hemodialysis equipment. Officials of several hospitals informed us that the normal capacity of a hemodialysis unit was one treatment each workday.

Colorado General Hospital, which fully utilizes its hemodialysis machines, had an agreement to furnish the VA hospital with hemodialysis services. During the period February to June 1969, VA paid the Colorado General Hospital $6,718 for chronic dialysis service provided to a VA patient.

General Rose Memorial Hospital, which has one hemodialysis machine, had a 44-percent utilization rate during the first 6 months of 1969. Presbyterian Medical Center had not accumulated utilization data for its three hemodialysis machines. An official of the center said, however, that two machines were used every day and that the third machine was in a standby capacity.

Lutheran Hospital used its one hemodialysis machine only 10 times during 1969. Rocky Mountain Osteopathic Hospital has one machine which is owned by a physician. No utilization data was available, but we were informed by hospital officials that the machine was used very seldom. Fitzsimons General Hospital provided us with utilization data for its three hemodialysis machines for 4 months during 1970, which showed a utilization rate of about 83 percent.

OPEN-HEART SURGERY

Four non-Federal hospitals and the two Federal hospitals in the Denver area provide open-heart surgery. Officials of two hospitals informed us that each open-heart-surgery facility could accommodate one open-heart procedure each day.

We obtained information on the utilization of open-heart-surgery facilities at three non-Federal hospitals. At St. Luke's Hospital we were advised that 132 open-heart procedures were performed at the hospital during 1969. We were advised by officials of Children's Hospital that 32 open-heart procedures were performed at the hospital during 1969. We were advised also that 87 open-heart procedures were performed at St. Joseph Hospital during fiscal year 1970. At a fourth non-Federal hospital, General Rose Memorial Hospital, we were advised that a special operating room for cardiac surgery was completed on March 1, 1970, at a cost of $750,000. We did not obtain utilization data for this facility.

During calendar year 1969, five open-heart procedures were performed at the VA hospital. A hospital official stated that the case load was about 5 percent of capacity. We did not obtain data on the utilization of open-heart-surgery facilities at Fitzsimons General Hospital.

OBSTETRICAL SERVICES

At the time of our fieldwork, 13 non-Federal hospitals in the Denver area offered obstetrical services. The average utilization of obstetrical beds in the Denver area for 1969 was 70 percent; utilization rates for the 13 individual hospitals ranged from 27 percent to 111 percent.

Two hospitals which previously offered obstetrical service no longer provide this service. In March 1965 Beth Israel Hospital discontinued its obstetrical service because of the declining birthrate in the Denver area and because of the high cost of continuing to provide this service. Beth Israel refers its obstetrical cases to St. Anthony's Hospital for care. The administrator of Beth Israel Hospital said that the discontinuance of obstetrical services at his hospital had resulted in cumulative savings of $175,000.

Presbyterian Medical Center discontinued its obstetrical service on July 1, 1969, because the service was not financially self-supporting.

PEDIATRIC SERVICES

Pediatric services were offered by 14 non-Federal hospitals in the Denver area. During 1969 the average utilization of pediatric beds was about 62 percent. The utilization rates for the 14 individual hospitals ranged from 6 percent to 112 percent.

For a number of years, residents in pediatrics at the University of Colorado Medical Center received part of their training at Children's Hospital; for the past 2 years, the hospital and the center shared pediatrics staff. In December 1970 Colorado Medical Center and Children's Hospital agreed to share clinical and professional facilities and to develop a single, specialized, comprehensive pediatric health service to serve the needs of the Rocky Mountain region. Officials were considering relocating Children's Hospital adjacent to Colorado Medical Center; the estimated cost of the proposed relocation was about $30 million.

COOPERATIVE EFFORTS OF HEALTH-CARE FACILITIES FOR SHARING MEDICAL AND OTHER SERVICES

Some health-care facilities in the Denver area shared, or planned to share, certain medical and administrative services to reduce operating costs and to provide medical services more effectively.

Craig Rehabilitation Center and Swedish Hospital

Craig Rehabilitation Center and Swedish Hospital participated in what was described by area health officials as the first significant step in Colorado toward areawide comprehensive health planning by two separate health-care facilities. Craig Rehabilitation Center leased land on the grounds of Swedish Hospital for the construction of an 80-bed rehabilitation facility. The plan developed by the facilities provided that they furnish each other with certain services at cost, which would eliminate the duplication of such services.

The plan provided also that Swedish Hospital furnish such services as laboratory, X-ray, operating-room, pharmacy, food, steam, air-conditioning, plant maintenance, purchasing, and accounting services. Craig Rehabilitation Center would furnish such services as physical therapy, occupational therapy, recreational therapy, language and speech evaluation, and vocational counseling.

The administrator of Craig Rehabilitation Center estimated that $1 million in construction costs had been saved because the center did not have to build facilities for services which were available from Swedish Hospital.

Swedish Hospital and Porter Memorial Hospital

Swedish Hospital and Porter Memorial Hospital engaged hospital consultants to suggest means by which the two hospitals could provide, singly or jointly, the most effective and efficient medical-care services to southern Denver and Arapahoe County.

Included in the consultants' recommendations were:

1. Study the feasibility of developing a single medical staff for the two hospitals.

2. Consider establishing a hemodialysis program in one of the hospitals.

3. Concentrate and broaden emergency-room services at Swedish Hospital.

4. Reorient emergency-room facilities at Porter Memorial Hospital to outpatient surgical services.

5. Combine the pediatric services of Porter Memorial and Swedish Hospitals at the earliest possible time and consider combining obstetrical services.

6. Analyze the need for radiation (cobalt) therapy in the entire Denver metropolitan area before deciding to establish radiation therapy capability.

At the time of our review, both hospitals were considering the consultants' recommendations. The hospitals were considering also, as a joint project, the establishment of an emergency room and an outpatient facility in southeast Denver to serve the medical needs of that area.

Formation of Midtown Hospital Association to study hospital cost control and improvements in quality of patient care

The Midtown Hospital Association, consisting of five hospitals and a rehabilitation facility in the Denver area, was organized in August 1967 and became operational in July 1969. Financial assistance to establish the association was provided by HEW and by a private foundation. The purpose of the association is to develop approaches to the problems of hospital cost containment while continuing to upgrade the quality of patient care. The association is devoting much of its study effort toward achieving (1) the sharing of services, equipment, and personnel and (2) the combining of facilities and services of member hospitals.

The following projects have been completed or undertaken by the association since its inception.

1. Members share a combined credit union.

2. Members, as a group, have contracted with a collection agency to achieve a significant reduction in the cost of collection services.

3. Members share an electronic data processing unit and a records-microfilming unit.

4. Members use common medical records forms with the anticipation that a combined medical records library will be established.

5. The association set up an office equipment repair team which serves all member hospitals at a cost that is 25 percent less than that of commercial repair service. Future savings of $140,000 a year are considered possible.

6. The association makes the services of physical therapists and clerical personnel available to member hospitals.

7. The association completed a study of the home locations of patients who received care in member hospitals and, at the time of our fieldwork, was conducting studies of the utilization of emergency and pediatric services of member hospitals.

Midtown Hospital Association has prepared a master facility plan. The association anticipates that the Denver Urban Renewal Authority will make funds available to create a hospital park complex which will geographically encompass all but one of the six institutions in the association. The master plan envisions a common transportation system, common parking facilities, and shared medical and supportive facilities. The association anticipates that funds for these facilities can be obtained from private enterprise, Federal assistance programs, and member hospitals.

Group purchasing

In 1963 eight Colorado hospitals formed the Commodities Purchasing Association of Colorado (COPAC) in an effort to reduce costs through group purchasing of goods and services. In 1969 membership of COPAC increased to 12 hospitals. During 1969 purchases by member hospitals through COPAC contracts with manufacturers and distributors of hospital supplies totaled $3 million. COPAC officials estimated that member hospitals had saved about $460,000 by purchasing through COPAC.

At the time of our fieldwork, 17 health-care facilities in Colorado, including 12 facilities in Denver (10 acute-care hospitals, one psychiatric hospital, and one rehabilitation facility), were members of COPAC.

CHAPTER 6

SCOPE OF REVIEW

We reviewed the coordination among Federal and State agencies and local organizations in planning and constructing acute-care hospitals and skilled-nursing-care facilities in the Denver area. We reviewed the planning for and construction of medical facilities financed with private funds or with Federal financial assistance. We compared the existing and planned capacity of acute-care hospitals and skilled-nursing-care facilities with the projected needs determined by the State agency. Although we verified the mathematical accuracy of the State agency's computation of future bed needs, we did not evaluate the appropriateness of the methodology prescribed by PHS for use by the State agency in determining future bed needs.

We reviewed also the actions taken to effect the sharing of certain facilities and equipment among the various hospitals.

Information was developed primarily on the basis of discussions with Federal, State, and local officials. We made our review at the Colorado Department of Health and at Denver area hospitals, skilled-nursing-care facilities, and other health organizations.