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United States General Accounting Office  
Washington, DC 20548

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April 18, 2003

The Honorable Bill Thomas  
Chairman  
Committee on Ways and Means  
House of Representatives

The Honorable Jerry Kleczka  
House of Representatives

Subject: *Specialty Hospitals: Information on National Market Share, Physician Ownership, and Patients Served*

Specialty hospitals represent a small but growing segment of the health care industry. These hospitals specialize in providing care for certain conditions, such as cardiac care, or performing certain procedures, such as orthopedic surgery. Specialty hospitals are not an entirely new phenomenon, as children's and other types of specialty hospitals have existed for decades. Consequently, it is challenging to distinguish between the old and new types of specialty hospitals. One aspect that sets apart the newer genre of specialty hospitals is that many are owned, in part, by the physicians who work in them.

Advocates contend that, because of their focused mission, specialty hospitals can provide high-quality specialty services more efficiently than general hospitals. Because specialty hospitals can tailor their facilities and resources to best fit the needs of certain types of patients, individuals treated in such hospitals may enjoy relatively greater convenience and comfort. Specialty hospitals may also offer physicians financial and work environment advantages. Advocates have stated that the focused mission and dedicated resources of specialty hospitals allow physicians to treat more patients than they could in general hospitals. Physicians may gain financially from this increased productivity. If they are part owners, physicians may also share in the financial gains that accrue to the hospital. Physicians in specialty hospitals may also have more control over patient scheduling and the purchasing of desired equipment.

However, concerns have been raised by general hospitals and others in the health care community that specialty hospitals are siphoning off the most financially rewarding portions of general hospitals' business. Representatives of general hospitals contend that specialty hospitals concentrate on the most profitable procedures and serve patients that have fewer complicating conditions—leaving general hospitals with a sicker, higher-cost patient population. Part of the concern is that physician ownership in specialty hospitals creates incentives to concentrate on

patients who are less sick than other patients with the same diagnosis, as a hospital is typically paid a fixed, lump-sum amount for treating someone with a given diagnosis. Hospitals can benefit financially by treating a disproportionate share of less ill patients because the payment amounts for these patients are not reduced to reflect the fact that fewer services are needed. Critics contend that this practice of drawing away a more favorable selection of patients makes it more financially difficult for general hospitals to fulfill their broad mission to serve all of a community's needs, including charity care, emergency services, and stand-by capacity to respond to community-wide disasters.

A federal law, known as the Stark anti-self-referral law, generally prohibits physicians from referring Medicare patients to facilities in which they (or their immediate family members) have financial interests.<sup>1</sup> The law was enacted after several studies found that physicians with ownership interests in separate clinical laboratories, diagnostic imaging centers, or physical therapy providers tended to make more referrals to them and order substantially more services at higher costs.<sup>2</sup> The Stark self-referral prohibitions do not apply in the case of specialty hospitals, however, because the law does not prohibit physicians who have ownership in an entire hospital from referring patients to that hospital.<sup>3</sup> It is likely that any referral or decision made by a physician who has a stake in an entire general hospital would produce little personal economic gain because such hospitals tend to provide a diverse and large group of services. However, the Stark law does prohibit physicians who have an ownership interest only in a hospital subdivision from referring patients to that subdivision. Concern exists with respect to specialty hospitals, that since they are usually much smaller in size and scope than general hospitals and closer in size to hospital departments, that their physician owners could influence their hospitals'—and therefore their own—financial gain through practice patterns and referrals.

In light of these concerns, you asked us to provide information on the prevalence of specialty hospitals, their characteristics in terms of ownership and patients treated, and the effect specialty hospitals have on the greater hospital communities in which they operate. We are preparing a comprehensive report to be issued later this year that will address these issues. This report provides available information on the

- share of the national hospital market comprising specialty hospitals,
- extent to which physicians have ownership interests in specialty hospitals, and
- patients served by specialty hospitals compared with those served by general hospitals, in terms of illness severity.

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<sup>1</sup>42 U.S.C. § 1395nn(a)(1)(A) (2000).

<sup>2</sup> U.S. General Accounting Office, *Medicare: Referrals to Physician-Owned Imaging Facilities Warrant HCFA's Scrutiny*, GAO/HEHS-95-2 (Washington, D.C.: Oct. 20, 1994). Jean Mitchell and Elton Scott, "Physician Ownership of Physical Therapy Services," *Journal of the American Medical Association*, vol. 268 (Oct. 21, 1992). For additional discussion of the topic, see Jennifer O'Sullivan, *Health Care: Physician Self-Referrals "Stark I and II,"* Congressional Research Service 97-5 EPW (Dec. 6, 1996).

<sup>3</sup>42 U.S.C. § 1395nn(d)(3) (2000).

Our work focused on hospitals that tended to treat patients for a limited group of diseases or conditions or that tended to perform surgical procedures. Specifically, we considered a hospital to be a specialty hospital if the diagnosis-related group (DRG) classification for two-thirds of its Medicare patients (or two-thirds of all of its patients where such data were available) fell into no more than two major diagnosis categories, such as diseases of the circulatory system (cardiac), or if at least two-thirds of its patients were classified in surgical DRGs. We excluded hospitals that specialized in providing long-term care or otherwise had missions that were largely distinct from the missions of short-term, acute care general hospitals.<sup>4</sup> We classified the hospitals that fit these criteria into five specialty types—cardiac, orthopedic, surgical, women’s, and other specialty. Because the other-specialty category contained a diverse set of hospitals that could not be compared to one another, we excluded hospitals in that category.<sup>5</sup> The information in this report is derived from our analysis of hospital inpatient discharge data, various administrative databases, and responses to our survey of specialty hospitals. We analyzed Medicare inpatient discharge data from all hospitals nationwide to help identify specialty hospitals. We also obtained Healthcare Cost and Utilization Project (HCUP) data on all patient discharges in 2000 from hospitals located in six states.<sup>6</sup> These states contained 25 urban specialty hospitals, slightly more than one-fourth of the existing specialty hospitals we identified. The all-patient discharge data from hospitals in these states were used to help identify specialty hospitals and analyze the relative illness severity among patients at specialty and general hospitals. For more detail regarding our specialty hospital criteria and analysis methodology, see the enclosure at the end of this report. Our work was performed from September 2002 through April 2003 in accordance with generally accepted government auditing standards.

## **Results in Brief**

Specialty hospitals represent a small but growing share of the national market. In February 2003, the 92 cardiac, orthopedic, surgical, and women’s hospitals that we identified and were open for business accounted for less than 2 percent of the short-term, acute care hospitals nationwide. Recent growth in specialty hospitals has been rapid—the number of facilities has tripled since 1990 and another 20 facilities are under development. Because specialty hospitals tend to be relatively small, they account for a somewhat low share of inpatient spending relative to their share of hospitals. The specialty hospitals in existence in fiscal year 2000 accounted for about 1 percent of Medicare spending for inpatient services.

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<sup>4</sup>Thus, we excluded hospitals that specialized in providing rehabilitation or in treating mental disorders, alcohol or drug problems, respiratory conditions, or newborns and children.

<sup>5</sup>The other-specialty category contained 18 hospitals that specialized in a variety of other areas, such as eye and ear, nose, and throat procedures.

<sup>6</sup>Data were from all hospitals in Arizona, California, New Jersey, New York, and North Carolina and the hospitals located in three regions of Texas.

About 70 percent of the specialty hospitals in existence or under development had some physician owners, according to our 2003 specialty hospital survey results. Among these hospitals, total physician ownership averaged slightly more than 50 percent. The average share owned by an individual physician was more than 2 percent at half the hospitals, while it was less than 2 percent at the other half. In about one-fifth of the hospitals with some degree of physician ownership, the largest share owned by an individual physician was at least 15 percent. Nearly all specialty hospitals with physician owners reported that some of the owners were members of a single group practice. The largest share owned by physicians in a single group practice was more than 25 percent at half the hospitals and less than 25 percent at the other half. In about 1 out of 10 specialty hospitals with physician owners, physicians in a single group practice owned 80 percent or more of the hospital.

We found that patients at specialty hospitals tended to be less sick than patients with the same diagnoses at general hospitals, although we did not determine the clinical and economic importance of this finding. Our analysis of all inpatient discharge data from the 25 urban specialty hospitals for which these data were available—about one-fourth of all specialty hospitals we identified nationwide—showed that 21 of the 25 specialty hospitals treated lower proportions of severely ill patients than did area general hospitals. For example, at an urban cardiac hospital in Arizona, about 17 percent of patients with the most commonly treated diagnoses were severely ill, whereas at 26 general hospitals in the same urban area, about 22 percent of patients treated for the same diagnoses were severely ill. For all four specialty hospital types included in our study—cardiac, orthopedic, surgical, and women’s—the median percentage of severely ill patients treated was lower than that for general hospitals. Four of the 25 specialty hospitals were exceptions, as they had treated patients that were as sick, or sicker, than the patients at general hospitals.

The American Surgical Hospital Association and two major specialty hospital chains—MedCath Corporation and National Surgical Hospitals—provided comments on a draft of this report. Representatives from these groups stated that physician ownership of specialty hospitals did not affect physician referral behavior and that our physician ownership discussion was potentially misleading. Our report provides information on the extent of physician ownership of specialty hospitals but, because of data limitations, we did not attempt to analyze the relationship between ownership and referral patterns. The specialty hospital representatives also questioned the extent to which the illness severity differences we reported might apply to specialty hospitals not in our sample and the economic significance of these differences. The illness severity differences that we report are based on an analysis of thousands of claims from more than one-fourth of the specialty hospitals that we identified. We did not attempt to assess the economic significance of these differences. A more complete summary of their comments and our evaluation of their comments is included at the end of this report.

## **Background**

The fixed-rate, lump-sum payments that health care payers typically make to hospitals for inpatient care for patients with a given diagnosis, regardless of the costs of serving particular patients, are designed to promote efficiency by discouraging hospitals from providing unnecessary services as a way to boost revenues. However, these lump-sum payments foster undesirable incentives, as hospitals may gain financially by serving a disproportionate share of low-cost patients. The mechanics of Medicare's hospital payment system illustrate this principle.

Under its system of prospective payments, Medicare pays a predetermined rate for each hospital discharge, based on the patient's diagnosis and whether the patient received surgery. In other words, the payments reflect an average bundle of services that the beneficiary is expected to receive as an inpatient for a particular diagnosis. Discharges are classified according to a list of DRGs. DRG payment rates are based on the expected cost of the diagnosis group's typical case compared with the cost for all Medicare inpatient cases. The DRG payment is not adjusted for within-DRG differences in severity of illness.<sup>7</sup> Therefore, hospitals have a financial incentive to treat as many patients as possible whose costs are low relative to the average patient in each DRG.

### **Specialty Hospitals Represent a Small but Growing Share of the National Market**

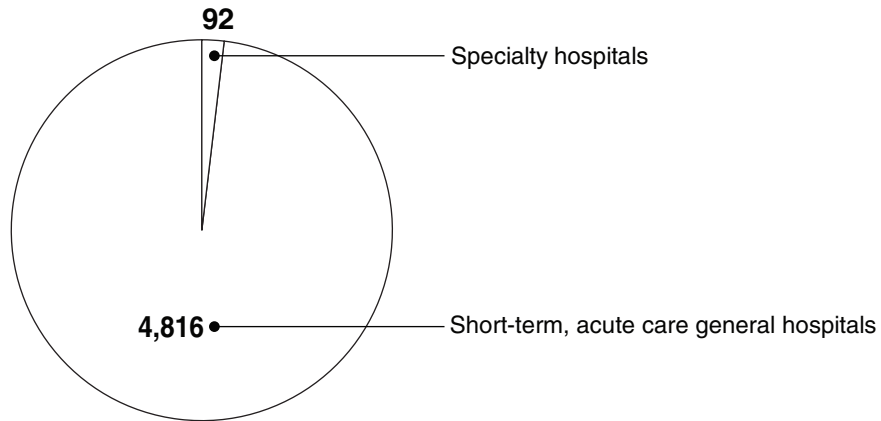
In February 2003, there were 17 cardiac, 36 orthopedic, 22 surgical, and 17 women's hospitals that met our specialty hospital definition and were open for business.<sup>8</sup> These 92 hospitals represent about 2 percent of all short-term, acute care hospitals nationwide. (See fig. 1.) The most recent Medicare discharge data indicate that the 80 specialty hospitals in existence in 2001 accounted for slightly less than 1 percent of Medicare spending for inpatient services.

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<sup>7</sup>An "outlier" policy exists to make additional payments to hospitals when their costs for a particular patient are extraordinarily high compared with the DRG rate for that patient's diagnosis group.

<sup>8</sup>Although we used several methods to identify specialty hospitals, the counts included in this report should not be interpreted as a complete census of the specialty hospitals in existence or under development. In particular, it is likely that our estimate of the number of women's hospitals is low. See the enclosure for a discussion of this issue.

**Figure 1: Number of Specialty Hospitals Relative to All Short-term, Acute Care General Hospitals, 2003**

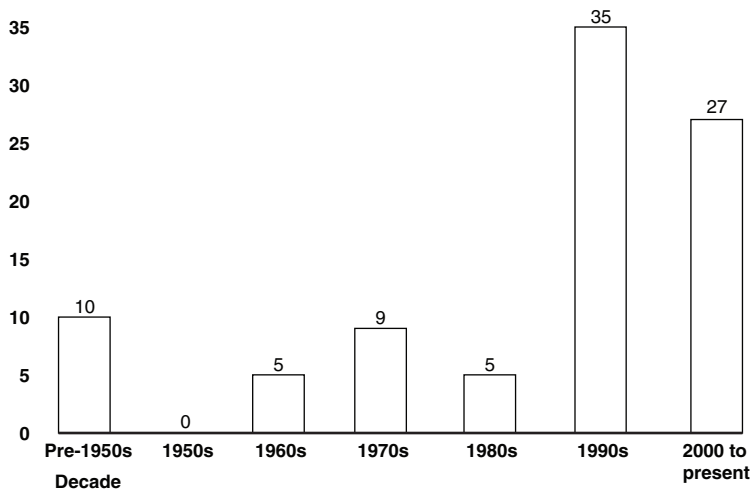


Sources: GAO and American Hospital Association (AHA).

The number of these facilities has grown rapidly in recent years—as of March 2003, the number of specialty hospitals had tripled from the 29 that existed in 1990. (See fig. 2.)

**Figure 2: Opening Years of Existing Specialty Hospitals, by Decade**

40 Number of hospitals

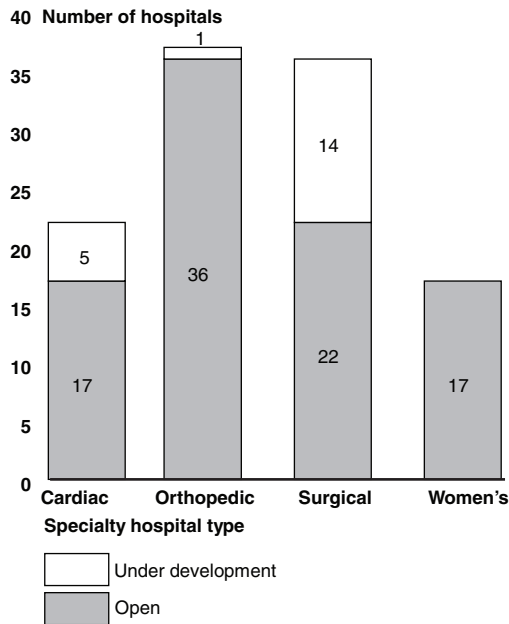


Sources: GAO and Centers for Medicare and Medicaid Services (CMS).

Note: Data are from the GAO specialty hospital universe file (2003) and the CMS Medicare Providers of Service file (2002).

An additional 20 specialty hospitals are now under development, most of which specialize in surgical care. (See fig. 3.)

**Figure 3: Number of Specialty Hospitals Open and Under Development, by Specialty Type**

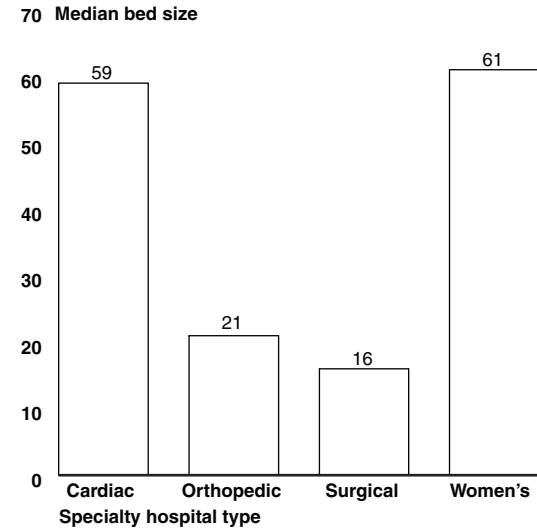


Sources: HCUP, CMS, industry groups, and hospital chains.

Note: Data are from HCUP (2000) and CMS Medicare Provider Analysis and Review (MedPar) file (2001). Data on the number of women's hospitals under development were not readily available.

In terms of beds, specialty hospitals are relatively small. In our study, surgical care facilities were the smallest, with a median of 16 beds, compared with a median of 61 beds for women's hospitals. (See fig. 4.) In contrast, the average short-term general hospital had approximately 170 beds.

**Figure 4: Median Number of Beds in Specialty Hospitals, by Specialty Type**



Source: GAO.

Note: Data are from GAO's specialty hospital survey (2003).

### **Physician Ownership of Specialty Hospitals Is Common, but Shares Owned by Individual Physicians or Physician Group Practices Vary Widely**

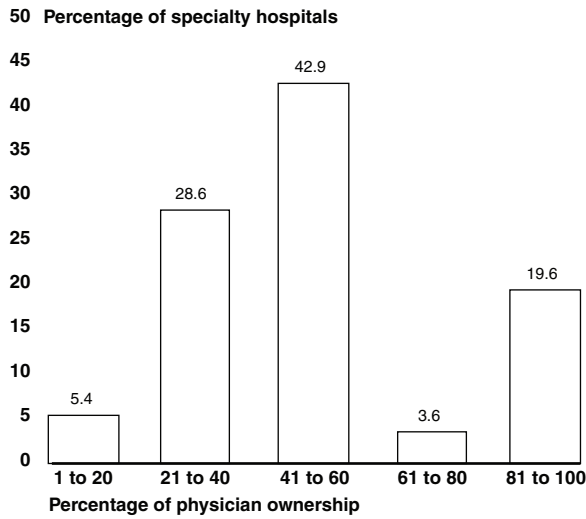
Our survey of the more than 100 specialty hospitals in existence or under development indicates that about 70 percent of specialty hospitals had some physician owners.<sup>9</sup> Of the specialty hospitals with any degree of physician ownership, physicians' combined ownership shares averaged slightly more than 50 percent of the hospital. About one-fifth of specialty hospitals were owned entirely, or nearly so, by physicians. (See fig 5.) Physicians owned 20 percent or less of the hospital in relatively few specialty hospitals.

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<sup>9</sup>Approximately 80 percent of specialty hospitals returned our survey, although the response rate on certain questions was somewhat lower. Physician ownership information was self-reported by hospitals and does not reflect ownership by physician family members.



**Figure 5: Specialty Hospitals by Extent of Physician Ownership**

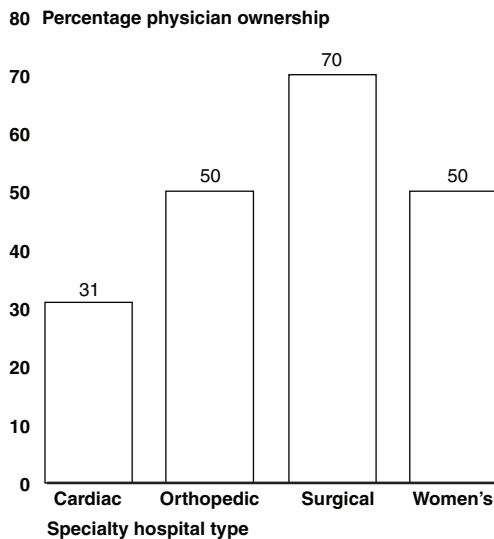


Source: GAO.

Note: Data are from GAO's specialty hospital survey (2003). Data include the approximately 70 percent of specialty hospitals that reported some degree of physician ownership.

Physicians tended to own somewhat smaller percentages of cardiac hospitals and larger percentages of surgical hospitals. (See fig 6.)

**Figure 6: Median Percentage of Hospital Owned by Physicians, by Specialty Type**

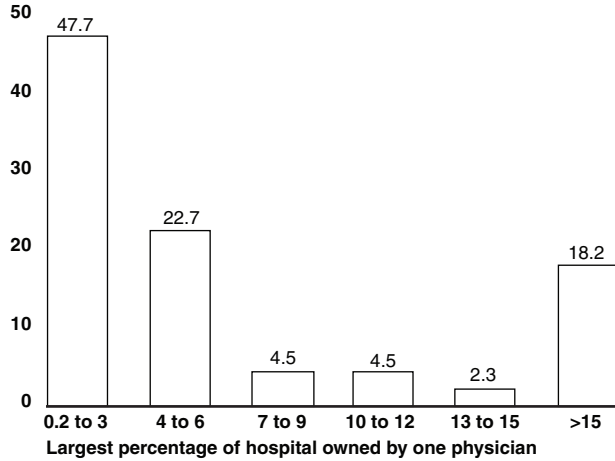


Source: GAO.

Note: Data are from GAO's specialty hospital survey (2003). Data include the approximately 70 percent of specialty hospitals that reported some degree of physician ownership.

On average, individual physicians owned relatively small shares of their hospitals. At half the specialty hospitals with physician ownership, the average individual share was less than 2 percent; at the other half, it was greater than 2 percent. Some physicians owned substantially larger shares. In nearly one-fifth of the specialty hospitals with some physician ownership, the largest share owned by a single physician was 15 percent or greater. (See fig. 7.)

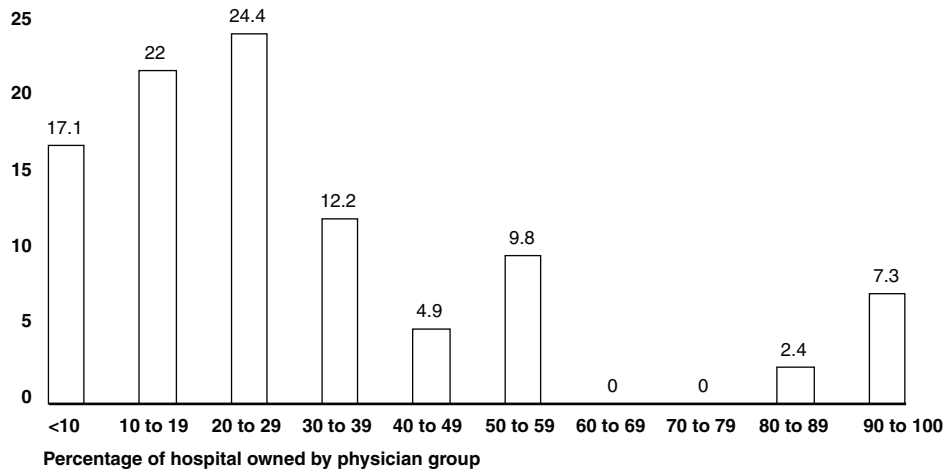
**Figure 7: Largest Share of Specialty Hospital Owned by an Individual Physician**  
60 Percentage of specialty hospitals



Note: Data are from GAO's specialty hospital survey (2003). Data include the approximately 70 percent of specialty hospitals that reported some degree of physician ownership.

Nearly all specialty hospitals with physician owners reported that some of the owners were members of a single group practice. The largest percentage of each hospital owned by physicians in a single group varied widely—at half the hospitals the largest percentage was more than 25 percent and at the other half it was less than 25 percent. In about 1 in 10 specialty hospitals, physicians in a single group practice owned 80 percent or more of the hospital. (See fig 8.)

**Figure 8: Largest Ownership Share by Physicians in a Single Group Practice at Specialty Hospitals**  
 30 Percentage of specialty hospitals



Source: GAO.

Note: Data are from GAO's specialty hospital survey (2003). Data include the approximately 70 percent of specialty hospitals that reported some degree of physician ownership.

### **Specialty Hospitals Tend to Treat a Lower Percentage of Severely Ill Patients than General Hospitals**

Some patients are more severely ill than others—even when compared to individuals who have the same principal diagnosis. Differences in age, secondary diagnosis, and other complicating conditions can affect the severity of patients' illnesses and the amount and cost of the resources required for their treatment.

To determine whether there were differences in illness severity between the patients treated at specialty hospitals and the patients treated at general hospitals, we analyzed calendar year 2000 patient discharge data at 25 specialty hospitals. These hospitals were located in 18 urban areas in six states: Arizona, California, New Jersey, New York, North Carolina, and Texas.<sup>10</sup> Our group of comparison hospitals consisted of the 396 general hospitals located in the same 18 urban areas. Our comparisons included only those general hospitals that provided short-term, acute care. We used a widely recognized system, known as All Payer Refined-Diagnosis Related Groups (APR-DRG), to assign an illness severity level to each patient on the basis of the information contained in the discharge data. This system, which is frequently used by hospitals and private insurers, groups patients into one of 355 diagnosis categories and assigns one of four severity levels (minor, moderate, major, or extreme) to each patient based on patient diagnosis, age, sex, and procedure. While we examined

<sup>10</sup>Data on all inpatient discharges were obtained from HCUP, a federal-state-industry partnership sponsored by the Agency for Healthcare Research and Quality.

illness severity differences between specialty and general hospitals, we did not determine the clinical or economic importance of these differences.<sup>11</sup>

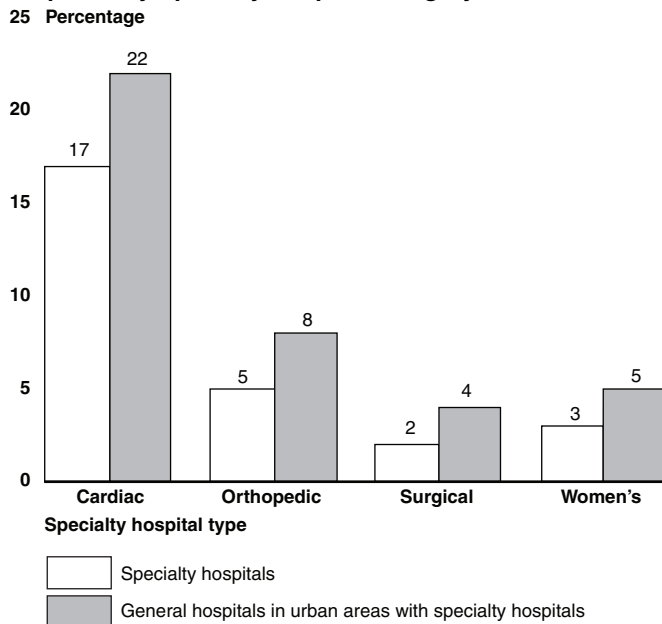
The vast majority of specialty hospitals with HCUP data available to us—21 out of 25—treated a lower percentage of patients who were severely ill—that is, assigned to the major or extreme severity levels by the APR-DGR system—relative to patients in the same diagnosis categories treated at general hospitals in the same urban areas. For example, 3 percent of the patients in the 10 most common diagnosis categories at one Texas orthopedic hospital were classified as severely ill. A higher proportion—8 percent—of the patients in the same diagnosis categories were classified as severely ill at the 51 general hospitals in the same urban area. A cardiac hospital in Arizona provides a similar example. About 17 percent of the patients in that hospital’s most common diagnosis categories were classified as severely ill. In contrast, 22 percent of the patients in the same diagnosis categories who were treated at the 26 general hospitals in the same urban area were classified as severely ill. Not all specialty hospitals treated patients who were, by comparison, less sick. Two of the 25 specialty hospitals treated a higher percentage of severely ill patients and two others treated about the same percentage as area general hospitals.

For all four specialty hospital categories—cardiac, orthopedic, surgical, and women’s—the median share of severely ill patients treated was lower than the median share of severely ill patients in the same diagnostic categories treated at the corresponding general hospitals. (See fig 9.) For example, the median orthopedic hospital, in terms of patient illness severity, had 5 percent of patients in its most common diagnosis group classified as severely ill. The median general hospital in the urban areas with orthopedic hospitals had 8 percent of patients in the same diagnosis groups classified as severely ill.

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<sup>11</sup>Average inpatient costs may be substantially higher for sicker individuals. In its March 2000 report to Congress, the Medicare Payment Review Advisory Commission (MedPAC) illustrated this relationship with several examples, including one for patients diagnosed with intracranial hemorrhage (APR-DRG 44). MedPAC found, based on its analysis of fiscal year 1997 Medicare data, that the estimated inpatient cost was \$3,195 for patients whose illness severity was classified as minor. The estimated costs were higher for patients with the same diagnosis who were classified as more severely ill: \$4,214 for moderate severity, \$5,454 for major severity, and \$11,255 for extreme severity. MedPAC noted that illness severity cost differences were smaller for some diagnoses and larger for others. In June 2000, MedPAC recommended that Medicare’s hospital inpatient payment system be improved by accounting for illness severity differences within DRGs.

**Figure 9: Median Percentage of Severely Ill Patients Treated in Specialty Hospitals and General Hospitals, by Specialty Hospital Category**



Source: HCUP.

Note: Data are from HCUP (2000).

### **Comments Obtained from Organizations Representing Specialty Hospitals and Our Evaluation**

We obtained comments from officials representing the American Surgical Hospital Association—a specialty hospital association—and from officials representing MedCath Corporation and National Surgical Hospitals—two major specialty hospital chains. Their comments, summarized below, primarily focused on physician ownership issues and our illness severity analysis. Unless otherwise noted, the following comments reflect the positions of all three organizations.

The specialty hospital representatives said that our report provided an inadequate, and potentially misleading, discussion of the financial incentives facing the physician owners of specialty hospitals. The officials believe that the average physician who invests in a specialty hospital owns such a small share that the theoretical incentive to steer relatively sick patients away from the facility is very weak. Instead, they believe that there is a strong incentive for physicians to treat patients in specialty hospitals because high-quality care can be provided efficiently in such facilities. According to the representatives, our report did not sufficiently discuss the efficiency gains achieved by specialty hospitals. The representatives also noted that many physicians who work in specialty hospitals are completely unaffected by investor-related financial incentives because they have no ownership stake in the facilities.

The representatives stated that our illness severity analysis had several potential limitations and that our results may not apply to all specialty hospitals. The representatives said that our results are based on a sample that is too small to be representative of all specialty hospitals. MedCath representatives noted that Medicare data were available for most of the 92 specialty hospitals that we identified and that we could have increased our sample size if our illness severity analysis had been based on Medicare data. Representatives from the three specialty hospital organizations suggested that we might have obtained different results if we had analyzed more claims from the hospitals that we did include. They also stressed that our reported differences in illness severity could be misleading because we did not analyze the economic or clinical implications of the differences.

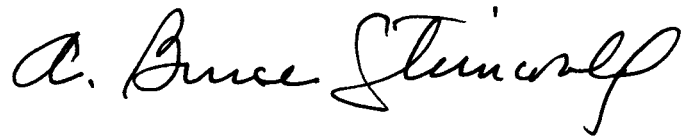
Our report discusses the concerns that some have raised regarding physician ownership of specialty hospitals and the potential effect on referrals. Data were not available on the identity of physician owners and therefore we could not determine if there was a relationship between physician ownership and referral behavior. Instead, our report provides descriptive information on the extent to which physicians own specialty hospitals. Our results show that many physicians who invest in specialty hospitals own relatively small shares. In about half the specialty hospitals the average share was 2 percent or less. However, our results also show that some physicians own considerably larger shares of 15 percent or more. Furthermore, the combined share owned by physicians who are members of a single group practice represents the majority ownership in some hospitals.

We disagree with the criticisms of our illness severity analysis. The 25 specialty hospitals included represent more than one-fourth of the facilities that we identified as meeting our criteria for a specialty hospital. We analyzed data pertaining to nearly 75,000 specialty hospital patients and approximately 900,000 general hospital patients. By focusing on the 10 most common diagnoses at each specialty hospital, we included nearly two-thirds of all patients treated at the specialty hospitals in our sample. Although an analysis of Medicare patients alone would have allowed us to increase the number of hospitals in our sample, it would have provided much less comprehensive information on the patients treated at each hospital. As we stated in our report, we did not attempt to determine the economic implications of the illness severity differences we observed between specialty and general hospitals. Research by MedPAC suggests that average treatment costs tend to rise with illness severity, as classified by the APR-DRG system, but we did not quantify the cost differences for the specific diagnoses we analyzed.

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We plan no further distribution of this report until 30 days after the letter's date. At that time, we will send copies of this report to appropriate congressional committees and other interested parties. We will also make copies available to others upon request. This report will be available at no charge on GAO's Web site at <http://www.gao.gov>.

If you or your staffs have any questions, please call me at (202) 512-7119 or James Cosgrove at (202) 512-7029. Other contributors to this report include Hannah Fein, Zachary Gaumer, and Ariel Hill.

A handwritten signature in black ink that reads "A. Bruce Steinwald". The signature is written in a cursive style with a large, prominent initial "A".

A. Bruce Steinwald  
Director, Health Care—Economic  
and Payment Issues

Enclosure

## **Scope and Methodology**

This enclosure provides additional information on three key aspects of our analysis. First, it lists the criteria we used to define specialty hospitals and the process we followed to identify them. Second, it discusses the survey used to collect physician ownership information. Finally, it describes the data and methodological approach used to compare patient illness severity at specialty and general hospitals.

### **Specialty Hospital Definition and Identification**

Although a standard definition for a specialty hospital does not exist, a reasonable approach is to define specialty hospitals as those that predominately treat certain diagnoses or perform certain procedures. For this report, we classified a hospital as a specialty hospital if the data indicated that

- two-thirds or more of its inpatient claims were in one or two major diagnosis categories (MDC) or
- two-thirds or more of its inpatient claims were for surgical diagnosis-related groups (DRGs).

Because our study focused on private, short-term, acute care hospitals, we eliminated from consideration hospitals that were government-owned and those that tended to provide long-term care or otherwise had missions very different from those of short-term, acute care general hospitals. Thus, we excluded

- government-owned hospitals;
- hospitals where the majority of inpatient claims were for MDCs that related to rehabilitation, psychiatry, alcohol and drug treatment, children, or newborns; and
- hospitals with fewer than 10 claims per bed per year.

Of the hospitals that met our criteria, 92 could be classified into four specialization categories: cardiac, orthopedic, surgical, and women's.<sup>12</sup> An additional 18 hospitals specialized in a variety of other areas, such as eye and ear, nose, and throat procedures. For this report, we focused on the specialty hospitals in the four major categories listed above.

We applied our criteria to inpatient discharge data from two different data sources: the 2001 Medicare Provider Analysis Review file and the 2000 Healthcare Cost and Utilization Project (HCUP) data set. Medicare and HCUP data both have distinct advantages and disadvantages. Medicare data contain patient information from virtually all of the nation's hospitals, but only for Medicare patients. Patients covered by Medicare are predominately age 65 or older. Consequently, some conditions—such as those that affect women of childbearing age—may be underrepresented, or

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<sup>12</sup>This number does not include hospitals that initially appeared to be specialty hospitals, but informed us through our survey that they did not meet our criteria for a specialty hospital.



not represented at all, in Medicare data. Thus, it is likely that an identification based on Medicare data may undercount the number of hospitals that specialize in treating such conditions.

In contrast to Medicare, HCUP data provide information on all of a hospital's patients. However, HCUP data are only available for hospitals in 29 states and each state's data must be purchased separately. We obtained HCUP data from the following six states: Arizona, California, New Jersey, New York, North Carolina, and Texas.<sup>13</sup> These states were selected because Medicare data identified them as having potentially large concentrations of specialty hospitals.

To identify specialty hospitals that opened too recently to be included in the Medicare or HCUP data, we obtained information from the American Surgical Hospital Association and two national specialty hospital chains: MedCath Corporation and National Surgical Hospitals. These three organizations also provided information on specialty hospitals that are under development.

### **Source of Physician Ownership Information**

To obtain information on physician ownership of specialty hospitals, we surveyed the more than 100 cardiac, orthopedic, surgical, and women's hospitals that we identified as in existence or under development. Among other questions, hospital representatives were asked about the number of physician owners, the overall percentage of the hospital owned by physicians, the largest share owned by a single physician, and the largest combined percentage of the hospital owned by physicians in a single revenue-sharing group practice. The survey was conducted from January through March 2003. Approximately 80 percent of the hospitals responded to our survey.

### **Severity of Illness Analysis**

To compare patient illness severity at specialty and general hospitals, we analyzed 2000 HCUP data from Arizona, California, New Jersey, New York, North Carolina, and Texas. An analysis of HCUP data for these six states identified 25 specialty hospitals in 18 urban areas.<sup>14</sup> Patients at each specialty hospital were compared to patients in the same diagnosis categories at short-term, acute care general hospitals in the same urban area. (See table 1.) A total of 396 general hospitals were used in the comparisons.

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<sup>13</sup>We obtained HCUP data on hospitals in three of Texas's five regions. .

<sup>14</sup>One specialty hospital was excluded because it was located in a rural area and we could not readily identify a set of general hospitals that should serve as the comparison group.

**Table 1: Number of Urban Specialty Hospitals and Comparison General Hospitals Used in Patient Illness Severity Analysis, by Specialty Hospital Type**

Specialty hospital type	Number of urban specialty hospitals	Number of urban areas	Number of general hospitals in urban areas (range)
Cardiac	7	7	5 to 26
Orthopedic	8	6	10 to 87
Surgical	3	3	2 to 51
Women's	7	7	7 to 87

Source: HCUP.

Note: Data are from HCUP (2000).

We used All Payer Refined Diagnosis Related Groups (APR-DRG), a widely recognized patient classification system developed by 3M Health Information Systems, to assign an illness-severity level (minor, moderate, major, or extreme) to each patient on the basis of the DRG information contained in the HCUP discharge data. The system, which is frequently used by hospitals and private insurers, groups patients into one of 355 diagnosis categories and assigns a severity level based on patient diagnosis, age, sex, discharge status, and procedure.

Based on numbers of patients treated, we identified the 10 most common diagnosis categories at each specialty hospital and computed the percentage of patients in each of those categories determined to be severely ill (that is, assigned to the major or extreme severity level by the APR-DRG system). We then determined the percentage of severely ill patients in the same 10 diagnostic categories treated at general hospitals located in the same urban area and used the result as a benchmark against which to compare the specialty hospitals. We repeated this process for each specialty hospital. This ensured that we compared illness severity among the types of patients typically treated at each specialty hospital to the illness severity for similar types of patients treated at area general hospitals.

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