

M A R C H 2 0 0 5

REPORT TO THE CONGRESS

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# Physician-Owned Specialty Hospitals



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Physician-Owned  
Specialty Hospitals

**MEDPAC** Medicare  
Payment Advisory  
Commission

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## Acknowledgments

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## **Executive summary**

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## Executive summary

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The number of specialty hospitals is small, but growing rapidly, with potential ramifications for the communities where they are located and for the Medicare program. Proponents claim that physician-owned specialty hospitals are the focused factory of the future for health care, taking advantage of the convergence of financial incentives for physicians and hospitals to produce more efficient operations and higher-quality outcomes than conventional community hospitals. Detractors counter that because the physician-owners can refer patients to their own hospitals they compete unfairly, and that such hospitals concentrate on only the most lucrative procedures and treat the healthiest and best-insured patients—leaving the community hospitals to take care of the poorest, sickest patients and provide services that are less profitable.

The Congress, in the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (MMA), imposed an 18-month moratorium that effectively halted the development of new physician-owned specialty hospitals. That act also directed MedPAC and the Secretary of the Department of Health and Human Services to report to the Congress on certain issues concerning physician-owned heart, orthopedic, and surgical specialty hospitals.

In answer to the Congress's questions, we analyzed hospitals' Medicare cost reports and inpatient claims from 2002 (the most recent available) and found that:

- Physician-owned specialty hospitals, thus far, do not have lower costs for Medicare patients than community hospitals, although their patients have shorter lengths of stay.
- They treat patients who are generally less severe cases (and hence expected to be relatively more profitable than the average) and concentrate on particular diagnosis-related groups (DRGs), some of which are relatively more profitable.
- They tend to have lower shares of Medicaid patients than community hospitals.
- The financial impact on community hospitals in the markets in which physician-owned specialty hospitals are located has been limited, thus far. Those community hospitals competing with specialty hospitals have demonstrated financial performance comparable to other community hospitals.
- Many of the differences in profitability across and within DRGs that create financial incentives for patient selection can be reduced by improving Medicare's inpatient prospective payment system for acute care hospitals.

These findings are based on the small number of physician-owned specialty hospitals that have been in operation long enough to generate Medicare data. The industry is in its early stage, so some of these findings could change as the industry develops. Although we did not evaluate the comparative quality of care in specialty hospitals, the Secretary is mandated to do so in a forthcoming report.

We found that physicians may establish physician-owned specialty hospitals to gain greater control over how the hospital is run, to increase their productivity, and to provide greater satisfaction for them and their patients. They may also be motivated by the financial rewards, some of which derive from inaccuracies in the Medicare payment system. Our recommendations concentrate on remedying those inaccuracies, which result in the system paying too much for some DRGs relative to others and too

much for patients with relatively less severe conditions. Improving the accuracy of the payment system would help make competition more equitable between community hospitals and physician-owned specialty hospitals. It would also make payment more equitable among community hospitals that currently are advantaged or disadvantaged by their mix of DRGs or patients. We also recommend an approach to aligning physician and hospital incentives through gainsharing, which allows physicians and hospitals to share savings from more efficient practices and might serve as an alternative to direct physician ownership.

## **RECOMMENDATION 1**

**The Secretary should improve payment accuracy in the hospital inpatient prospective payment system by:**

- refining the current DRGs to more fully capture differences in severity of illness among patients,
- basing the DRG relative weights on the estimated cost of providing care rather than on charges, and
- basing the weights on the national average of hospitals' relative values in each DRG.

## **RECOMMENDATION 2**

**The Congress should amend the law to give the Secretary authority to adjust the DRG relative weights to account for differences in the prevalence of high-cost outlier cases.**

Taken together, these recommendations will change the potential to profit from patient and DRG selection and result in payments that more closely reflect the cost of care while still retaining the incentives for efficiency in the hospital inpatient prospective payment system (IPPS). For example, we found that physician-owned specialty heart hospitals now benefit from both the selection of DRGs and the selection of patients they treat within those DRGs. Under current policy, heart hospitals' expected relative profitability from their combination of DRGs and patients is substantially above the national average profitability for all DRGs and patients. Following our recommendations, that ratio would be about equal to the national average. Selection benefits in orthopedic and surgical physician-owned specialty hospitals would also be reduced.

These payment system refinements would affect all hospitals—both specialty hospitals and community hospitals—and many would see significant changes in payments. A transitional period would mitigate those effects and allow hospitals to adjust to the refined payment system.

## **RECOMMENDATION 3**

**The Congress and the Secretary should implement the case-mix measurement and outlier policies over a transitional period.**

Making these payment system improvements and designing the transition will not be simple tasks. We recognize that the Centers for Medicare & Medicaid Services (CMS) has many priorities and limited resources, and that the refinements will raise some difficult technical issues. These include the potentially large number of payment groups created, possible increases in spending from improvements in coding, rewarding avoidable complications, and the burden and time lag associated with using costs rather than charges. Nevertheless, certain approaches that we discuss in this report, such as re-estimating cost-based weights every several years instead of annually, could make these issues less onerous.

In addition to concerns about the payment system, the current moratorium expires on June 8, 2005, which raises other issues.

#### **RECOMMENDATION 4**

**The Congress should extend the current moratorium on specialty hospitals until January 1, 2007.**

The Commission is concerned with the issue of self-referral and its potential for patient selection and higher use of services. However, removing the exception that allows physician ownership of whole hospitals would be too severe a remedy at this time, although we may wish to reconsider it in the future. Our evidence on physician-owned specialty hospitals raises some concerns about patient selection, utilization, and efficiency, but it is based on a small sample of hospitals, early in the development of the industry. We do not know yet if physician-owned hospitals will increase their efficiency and improve quality. We also do not know if, in the longer term, they will damage community hospitals or increase use of services beyond the norm. Information from the Secretary's forthcoming report on quality and further information on physician-owned specialty hospitals' performance is needed before actions are taken that would, in effect, entirely shut them out of the Medicare and Medicaid market. The Congress will need time during the upcoming legislative cycle to consider our recommendations and craft legislation, and the Secretary will need time to change the payment system. Continuing the moratorium will allow time for such efforts and time to gather more information.

Aligning financial incentives for physicians and hospitals could lead to efficiencies. Physician ownership fully aligns incentives; it makes the hospital owner and the physician one in the same, but raises concerns about self-referral. Efficiencies might be achieved by allowing the physician to share in savings that would accrue to the hospital from re-engineering clinical care. Such arrangements have been stymied, however, by provisions of law that prevent hospitals from sharing savings with physicians because of concerns about possible stinting on care and quality. Structured properly, gainsharing arrangements could garner the benefits of aligning incentives while allaying legitimate concerns.

#### **RECOMMENDATION 5**

**The Congress should grant the Secretary the authority to allow gainsharing arrangements between physicians and hospitals and to regulate those arrangements to protect the quality of care and minimize financial incentives that could affect physician referrals.**

Gainsharing could capture some of the incentives that are animating the move to physician-owned specialty hospitals while minimizing some of the concerns that direct physician ownership raises. Permitting gainsharing opportunities and lessening the current inaccuracies in the Medicare payment system will provide an alternative to starting physician-owned specialty hospitals. At the same time, these actions should maintain incentives for improved hospital performance.



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## **Physician-owned specialty hospitals**

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# R E C O M M E N D A T I O N S

- 1** The Secretary should improve payment accuracy in the hospital inpatient prospective payment system by:
- refining the current DRGs to more fully capture differences in severity of illness among patients,
  - basing the DRG relative weights on the estimated cost of providing care rather than on charges, and
  - basing the weights on the national average of hospitals' relative values in each DRG.

**COMMISSIONER VOTES: YES 16 • NO 0 • NOT VOTING 0 • ABSENT 1**

.....

- 2** The Congress should amend the law to give the Secretary authority to adjust the DRG relative weights to account for differences in the prevalence of high-cost outlier cases.

**COMMISSIONER VOTES: YES 14 • NO 1 • NOT VOTING 0 • ABSENT 2**

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- 3** The Congress and the Secretary should implement the case-mix measurement and outlier policies over a transitional period.

**COMMISSIONER VOTES: YES 15 • NO 0 • NOT VOTING 0 • ABSENT 2**

.....

- 4** The Congress should extend the current moratorium on specialty hospitals until January 1, 2007.

**COMMISSIONER VOTES: YES 16 • NO 0 • NOT VOTING 0 • ABSENT 1**

.....

- 5** The Congress should grant the Secretary the authority to allow gainsharing arrangements between physicians and hospitals and to regulate those arrangements to protect the quality of care and minimize financial incentives that could affect physician referrals.

**COMMISSIONER VOTES: YES 15 • NO 0 • NOT VOTING 0 • ABSENT 2**

Specialty hospitals have been part of the U.S. health care system since Medicare's inception. Hospitals that specialize in care for children, women, eyes, and other medical areas have long been part of the medical landscape. What has raised questions and concerns in recent years is the rapid growth of small, physician-owned hospitals specializing in cardiac care, orthopedics, and surgery—services thought to be highly profitable. Advances in medical technology, pressure on physicians' incomes, dissatisfaction with the responsiveness of community hospitals, distortions in the payment system, and conversions of ambulatory surgical centers to surgical hospitals have been cited as contributing to these hospitals' development.

Proponents of physician-owned specialty hospitals contend that their facilities are “focused factories.” By offering a limited range of services, and by allowing physicians and other members of the care team more control over the care process, they assert such hospitals can produce care more efficiently and with higher-quality outcomes. Proponents also contend that specialty hospitals' smaller scale and focus on patient-centered care not only improve clinical outcomes but also satisfaction among their patients and physicians. Specialty hospital advocates state that they spur system-wide innovations because—through competition—they pressure community hospitals to make comparable improvements.<sup>1</sup>

Community hospital representatives state that specialty hospitals skim off the most profitable patients—by the types of services they provide and by treating the least complex (and, therefore, least expensive) patients. This selection, they contend, undermines community hospitals' ability to subsidize the less-profitable services they furnish to their communities. Critics of physician-owned specialty hospitals also contend that specialty hospitals do not contribute enough to community needs, such as providing emergency services and care for the poor and uninsured.

The Congress was sufficiently concerned about the development of specialty hospitals—and the possible consequences for existing community hospitals, Medicare beneficiaries, and Medicare payment—to include a moratorium on their further development in the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (MMA). Specifically, the law imposed an 18-month moratorium during which physician-investors in new specialty hospitals may not refer Medicare or Medicaid patients to those hospitals, thereby effectively halting the development of new specialty hospitals.<sup>2</sup> The moratorium expires on June 8, 2005.

The law also requires both MedPAC and the Secretary of Health and Human Services to examine physician-owned specialty hospitals.<sup>3</sup> For purposes of the moratorium and our report, the law defines specialty hospitals as hospitals that are physician owned and “primarily or exclusively engaged” in the care and treatment of patients with a cardiac or orthopedic condition, patients receiving a surgical procedure, or any other specialized category of services designated by the Secretary.<sup>4</sup>

The Secretary is charged with analyzing the referral patterns of physician-owners, the quality of care furnished in physician-owned specialty hospitals, and the extent to which specialty hospitals furnish uncompensated care. MedPAC is to consider:

- the cost of care at physician-owned specialty and full-service community hospitals,
- the financial impact of physician-owned specialty hospitals on local full-service community hospitals,
- differences in the payer mix between specialty and full-service community hospitals,

- patient selection within categories of cases, comparing specialty and full-service community hospitals, and
- improvements to Medicare’s hospital inpatient prospective payment system (IPPS) that should be made to better reflect the cost of care in a hospital setting.

This report fulfills that mandate. However, bear in mind that the development of physician-owned specialty hospitals is still a relatively new phenomenon. Our analysis is based on data from a limited number of hospitals over a limited period of time. The industry is still young; findings could change as it evolves.

## **What are specialty hospitals and where are they located?**

We found 48 hospitals that met our criteria for physician-owned specialty hospitals: 12 heart hospitals, 25 orthopedic hospitals, and 11 surgical hospitals. Our criteria are that the hospitals must:

- Be physician owned.
- Specialize in certain services—at least 45 percent of their Medicare cases must be in cardiac, orthopedic, or surgical services or at least 66 percent must be in two major diagnostic categories (MDCs), with the primary one being cardiac, orthopedic, or surgical cases.<sup>5</sup>
- Have a minimum volume of at least 25 total Medicare cases during 2002 (to ensure a minimum volume of Medicare cases for analysis).
- Have submitted Medicare cost reports and claims for 2002.

Throughout this report, “specialty hospitals” will refer to the 48 physician-owned hospitals meeting these criteria. Altogether, there are now about 100 specialty hospitals, but some could not provide sufficient data for our analysis because they either opened after 2002 or are still under construction.<sup>6</sup>

According to our survey of hospitals (see Appendix C for a description of the survey), specialty hospitals vary in the total share that is owned by physicians (Table 1). On average, physicians own 60 percent: Physicians at heart hospitals own the smallest average share (35 percent), while those at surgical hospitals own the largest average share (73 percent). About one-third of orthopedic and surgical hospitals were owned almost entirely by their physicians (not shown), while no heart hospital was. At half of all physician-owned specialty hospitals, the largest physician shareholder owned at least a 4 percent interest in the hospital. The largest share owned by any individual physician varies considerably across the specialty hospitals. In about one-third of specialty hospitals, the largest share owned by a single physician is 2 percent or less. Yet in about one-fifth of the hospitals, one physician owned at least 15 percent of the facility.

### **Specialty hospitals differ from most hospitals**

Specialty hospitals are small: The average orthopedic specialty hospital has 16 beds and the average surgical specialty hospital has 14. Heart hospitals are larger, averaging 52 beds. Specialty hospitals are much less likely to be teaching hospitals than other hospitals. Only one orthopedic specialty hospital was a teaching hospital, and it did not meet the criteria for a major teaching hospital.<sup>7</sup> In our data, specialty hospitals are also much less likely to treat low-income patients, as measured by the share of hospitals receiving disproportionate share hospital (DSH) payments under the Medicare IPPS.<sup>8</sup>



**TABLE  
1****Physician ownership generally less in heart hospitals****Share of hospitals owned by all physicians combined**

	<b>Number of hospitals</b>	<b>Average</b>	<b>Range</b>
All specialty hospitals	48	60%	18–100%
Heart hospitals	12	35	21–49
Orthopedic hospitals	25	67	18–100
Surgical hospitals	11	73	25–100

Note: Note: Share owned by individual physicians varies. For the median specialty hospital, the largest share owned by a single physician is 4 percent. At about one-third of specialty hospitals, the largest share is 2 percent or less. At one-fifth of specialty hospitals, the largest share owned by a single physician is at least 15 percent.

Source: MedPAC National Survey of Specialty Hospitals, 2004.

Almost all community hospitals (93 percent) have emergency departments (EDs) (MedPAC 2005). Specialty hospitals on average are about half as likely to have EDs, but 8 of the 12 heart hospitals we examined have EDs, compared with only 1 of the 11 surgical hospitals. The use of the emergency department may influence how much control the hospital has over its schedule and patient mix. The heart hospitals we visited that had EDs (see text box) were included in their area's emergency medical systems' routing of patients who required the services they could provide. In contrast, even when surgical and orthopedic specialty hospitals have EDs, they may not treat many emergencies. On one of our site visits, the lights of one surgical hospital's emergency room had to be turned on to show us what appeared to be a rarely used room, and ambulances were not routed to it.

Specialty hospitals also vary considerably in physician staffing of EDs. All of the heart hospitals with EDs have physicians in the EDs around the clock, compared with only one orthopedic and no surgical hospital.

All of the physician-owned specialty hospitals are for profit, compared with under 20 percent of all IPPS hospitals. In some cases, community hospitals have ownership interests in the specialty hospitals. In others, the specialty hospital is owned in part by a national chain. Eight of the twelve heart hospitals are owned in part by the MedCath Corporation.

**Site visits**

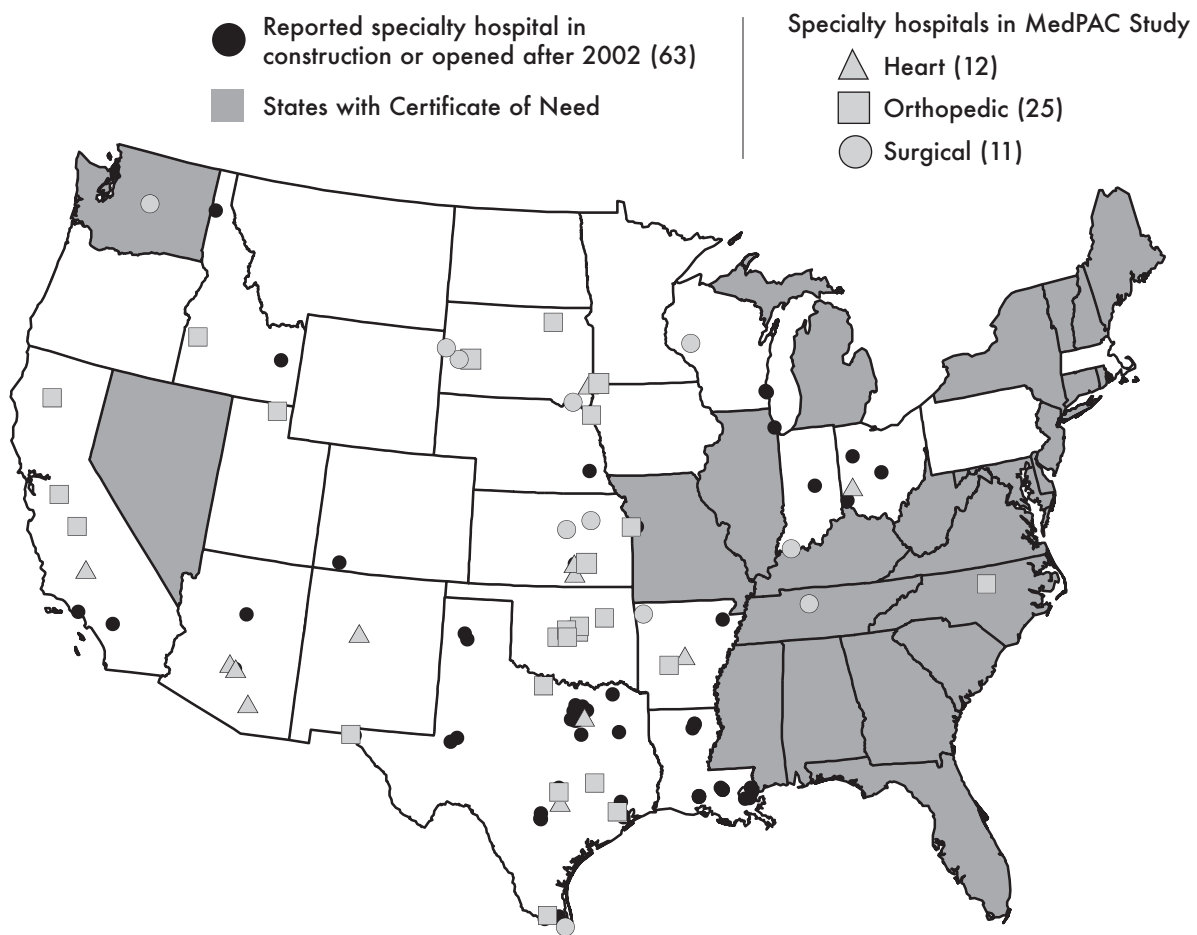
MedPAC staff conducted site visits to three specialty hospital markets: Austin, Texas; Wichita and Manhattan, Kansas; and Sioux Falls, South Dakota. In total, we interviewed representatives from eight specialty hospitals and nine community hospitals during our site visits. The site visits provided additional market information and input from stakeholders about the issues surrounding specialty hospitals. We also spoke with directors of ambulance services and private insurers. These sites were selected based on their geographic diversity, the number and types of specialty hospitals located there, the age of the specialty hospitals, and the mix of specialty hospital-community hospital arrangements. In addition to the site visits, we spoke with representatives from an additional 7 community hospitals and 14 specialty hospitals. ■

## Specialty hospitals are concentrated geographically

Specialty hospitals are not evenly distributed across the country (Figure 1). Almost 60 percent of the specialty hospitals we studied are located in four states: South Dakota, Kansas, Oklahoma, and Texas. This concentration results in some states such as South Dakota having a high share of the specialty hospitals (16 percent) even though its share of IPPS hospitals is small (less than 1 percent). Many of the specialty hospitals that are under construction or have opened since 2002 are located in the same states and markets as the specialty hospitals we studied. As the map shows, specialty hospitals are concentrated in states without certificate-of-need (CON) programs. (This is somewhat less true for surgical specialty hospitals, although still more than 80 percent are located in non-CON states.)

State hospital licensing laws may be another key factor in determining which states have specialty hospitals. States vary in their requirements for hospitals to have emergency departments. For example, specialty hospitals in Arizona, California, and Kansas are not required to have EDs. Some states (such as South Dakota, Arizona, and Kansas) have different classes of hospital licenses that make it easier to

**FIGURE 1** Specialty hospitals are geographically concentrated



develop specialty hospitals. For example, to help foster rural hospital development, South Dakota has a license category for hospitals that do not offer a full array of services. Other state laws discourage specialty hospital development. For example, Florida recently banned specialty hospitals, and Kentucky prohibits physician self-referrals. State requirements that physicians disclose their ownership interests to patients do not appear to deter specialty hospital development. For example, Kansas and California have disclosure requirements and have several specialty hospitals.

The markets where specialty hospitals are located vary by specialty type. Overall, specialty hospitals tend to be located in small and midsized urban areas rather than in large urban areas or in rural areas.<sup>9</sup> On average, the markets with heart and orthopedic specialty hospitals had larger populations and experienced larger population growth in the past decade compared with markets without specialty hospitals. In contrast, markets with surgical specialty hospitals, several of which are rural areas, did not have larger populations or population growth. The markets of orthopedic and surgical specialty hospitals had lower managed care penetration than markets without them, while the rates were higher for heart hospital markets.

The populations of specialty hospital markets were younger and had poverty rates similar to those of other markets. Within their markets, specialty hospitals did not appear to systematically locate in high-income areas. Although the census tracts where they were located had median household income levels 2 percent higher than the average for the county, the difference was not statistically significant. Markets with specialty hospitals had fewer hospital beds and surgical specialists per 1,000 population compared with markets without them, but similar per capita service use.

## **Motivations for developing physician-owned specialty hospitals, and critics' concerns**

Physicians are motivated to develop specialty hospitals for two main reasons: to directly control hospital operations regarding patient care and to augment their incomes. The physician-owners we spoke with varied in the importance they placed on each of these factors. Critics of specialty hospitals emphasize the financial rewards of specialty hospitals to their owners and the threat physician-owned specialty hospitals pose to community hospitals.

### **Physicians see control as essential**

During our site visits, the physician-owners we spoke with said the primary issue for them was greater control of hospital operations. Some physicians involved in the formation of specialty hospitals state that they had tried unsuccessfully to change their community hospitals. Some community hospital administrators acknowledge they were slow to react to their physicians' demands for changes. Physicians seeking control of hospital operations is not new. Paul Starr cites a 1902 *Journal of the American Medical Association* (JAMA) article in which one physician asks "Is it not time the professional mind began to dominate in the control of these institutions?" (Starr 1982). The current wave of specialty hospital formation may just be the latest manifestation of the desire for physician control.

In the physician-owned specialty hospitals we studied, the cardiologists and surgeons want to admit their patients, perform their procedures, and have their patients recover with minimal disruption. Physician control, they believe, makes this possible in ways community hospitals cannot match. Control allows them to increase their own productivity for the following reasons:

- fewer disruptions to the operating room schedule (for example, delays and canceling of cases that result from emergency cases),
- less down time between surgeries (for example, cleaning the operating rooms more efficiently),
- heightened ability to work between two operating rooms during a block of operating room time, and
- more direct control of operating room staff.

These same features also minimize scheduling uncertainty and delay for patients and would also apply to noninvestor surgeons and cardiologists.

Physician-owners argue that the smaller scale of specialty hospitals helps to create a hospital environment that is more satisfying for their patients and their patients' families. In addition, some specialty hospitals are designed to minimize moving patients during their stay (for example, by equipping patient rooms to function as recovery or step-down areas), making it easier for visitors (and physicians) to locate patients. By not moving patients as they change levels of care, hospitals can increase the continuity of nursing care. Some specialty hospitals are also increasing the ratio of nurses to patients. More nursing attention for each patient is thought to contribute to shorter lengths of stay and improve patient outcomes.

Another motivation for specialty hospital formation applies to physicians converting ambulatory surgical centers (ASCs) to hospitals. Medicare does not pay facility fees for procedures in ASCs that require overnight stays. Some physicians want to expand the range of cases seen in ASCs to include patients who might require more monitoring and an overnight stay. Doing so requires conversion of the ASC to a hospital.

Physician ownership of hospitals is not the only way for physicians to have influence over hospitals' operations. Physicians can influence hospitals' operations by serving on hospital boards, participating in hospital committees, serving as hospital chief medical officer or chief executive officer (CEO), and through their roles on hospitals' medical staffs. At some hospitals, physicians may have enough influence to change hospital management when they feel that the hospital is not being run in their interest. Another alternative is for physicians to form a nonprofit entity in which they have more influence over the hospital operating environment. An example of the latter model is the Mayo Clinic, a nonprofit entity that owns hospitals and physician practices. Mayo physicians represent approximately 20 percent of the board members of each Mayo hospital, and a physician is often CEO. (However, even in a nonprofit hospital directed by physicians, physicians in different specialties would still have to compete with one another for limited hospital resources.) Theoretically, this nonprofit model provides a high level of physician influence without creating strong financial incentives for physicians to steer profitable patients or increase service use.

### **Physicians have economic incentives to form specialty hospitals**

The other motivation to form specialty hospitals is economic. In addition to increased productivity resulting in more professional fees, physician-investors also could augment their income by retaining a portion of the facility profits for their own and others' work. Although some specialty hospitals have not made distributions, the annual distributions at others frequently have exceeded 20 percent of the physicians' initial investment. Physician-owners of ASCs converting to hospitals might also benefit from higher outpatient rates versus ASC rates, fewer restrictions on allowable procedures, and the ability

to refer patients to and charge Medicare for ancillary services such as labs and imaging. The specialty hospitals in our study had an average all-payer margin of 13 percent in 2002, well above the 3 to 6 percent average for community hospitals in their markets.

Physicians' investment is often leveraged, increasing their return on investment if the hospital is successful. Physicians (or their corporate partners) typically borrow 70 percent to 80 percent of the hospital's initial cost. Generally, a group of physicians make personal investments, often in the range of \$25,000 to \$50,000, and share ownership with outside investors, such as a national chain, a local hospital, or local business people.

There is disagreement about how important physician ownership is to the development of specialty hospitals. On our site visits, we were told that banks usually require evidence of physician investment before they grant loans for the hospital as a way to ensure sufficient physician commitment. Some maintain that ownership is central to keeping physicians involved in decisions about how to organize patient care. Others believe that ownership is not essential, but having physicians direct the way care is organized is key. Some community hospital administrators assert that even after meeting physicians' demands, their physicians still formed a specialty hospital, reinforcing suspicions that financial incentives were the key motivation. Whatever the initial motivation, certain aspects of physician ownership contribute to specialty hospitals' financial performance, as we discuss below.

Securing a core group of referring physicians is critical to specialty hospitals' viability. Making physicians investors in the project can help ensure referrals. Some facility administrators also reported they require or encourage their physician-investors to sell their interests when they retire or if they fail to bring in a minimum number of cases. Many specialty hospitals establish large referral networks that expand into rural areas to secure admissions.

Specialty hospitals aggressively work with their medical staffs to standardize their use of medical supplies (such as sutures) and devices (such as implants, stents, and pacemakers). By streamlining the number of suppliers and increasing the volume ordered from each, hospital administrators assert the hospital can gain leverage over the suppliers used, thereby securing deeper discounts. Ownership and involvement in establishing hospital policies make many physicians willing to accept limits on their use of supplies and devices, which, community hospitals report, they were unwilling to accept when practicing at community hospitals.

Specialty hospitals have greater control over admissions compared with full-service community hospitals. First, many specialty hospitals reported that physicians have admitting privileges at a nearby community hospital, which allows the specialty hospital physicians to send certain cases to one hospital and other types of cases to the other. Second, hospitals that do not have EDs have more control over the types of cases admitted, including the payer mix. Patients are generally first seen in physicians' offices or in outreach clinics, giving physician-owners time to consider the case and where to treat it. In addition, a narrower range of services offered at specialty hospitals will help shape their mix of payers and patients regardless of physician ownership.

## **Critics contend specialty hospitals threaten community hospitals**

Specialty hospitals may concentrate on providing services that are profitable and on treating patients who are less sick—and therefore less costly. Under Medicare’s IPPS, payments are intended to adequately cover the costs of an efficient provider treating an average mix of patients, including patients with complex (and costly) care needs. But if differences in payments do not fully reflect differences in costs across services and patient severity, some mixes of services and patients could be more profitable than others. Systematic bias in any payment system, not just Medicare’s, could reward those hospitals that selectively offer services or treat patients with profit margins that are consistently above average. Community hospitals claim that they rely on these same profitable services (in which they may have invested substantially) to cross-subsidize care that is less profitable. They contend that by taking away profitable volume, specialty hospitals jeopardize the community hospitals’ ability to offer less-profitable services.

Community hospitals also contend that the specialty hospitals’ limited service mix contributes to the uneven playing field they face in competing with specialty hospitals. The lack of certain services at specialty hospitals may increase the likelihood that patients with relatively complex care needs or those who lack insurance will go elsewhere for their care.

Some specialty hospitals acknowledge that they treat the relatively uncomplicated patients within the clinical categories they serve, but they believe that this patient selection reflects responsible medicine. They state that because they lack readily available consulting specialists or specialized equipment to handle patients with complicating conditions, they should not expose such patients to unnecessary risk by admitting them for care. Other specialty hospitals deny that they select patients who are easier to treat, and those with emergency rooms note that they cannot control their admissions, as their opponents contend.

Community hospitals point to declines in volumes and margins, and hold specialty hospitals responsible for any deterioration. In rural areas, community hospitals’ limited ability to attract replacement physicians to generate hospital referrals may make their recovery more precarious.

However, some proponents of specialty hospitals argue that competition with specialty hospitals improves community hospital operations. Some community hospital administrators admit that competition with specialty hospitals has had some positive effects on community hospitals’ operations. One community hospital administrator told us that the specialty hospitals were akin to a wake-up call—getting them to pay more attention to hospital operations and physician relations. We heard several examples of constructive improvements sparked by the entrance of a specialty hospital into a market, including extending service hours, improving operating room scheduling, standardizing the supplies in the operating room, and upgrading equipment.

In reaction to the entry of specialty hospitals, some community hospitals sought exclusive contracts with private payers and Medicaid managed care plans, with varying success. In some markets, specialty hospitals have been locked out of contracts, undermining their ability to generate volume. In other markets, the community hospitals told us that the specialty hospitals had diluted some of the leverage the community hospitals might have otherwise had with payers. Some specialty hospitals told us they are lower-cost providers than community hospitals and that payers have been eager to contract with them, reportedly paying some specialty hospitals lower rates. One private plan representative told us that they pay lower rates to surgical and orthopedic specialty hospitals because the surgical hospitals’ cases are

believed to be similar in complexity to ASC cases, and hence, less complex than community hospital cases. However, he did not believe they saved money overall because of possible increases in utilization.

Some community hospitals barred their physicians from being owners at specialty hospitals; others were considering that step. Short of this, other hospitals have adopted policies that dampen specialty hospital expansion, such as including noncompete clauses in their physician contracts to protect them from physicians shifting their practices to specialty hospitals. Specialty hospital management asserted that pressuring local bankers not to lend specialty hospitals money is another strategy used by community hospitals.

### **Critics see physician ownership as conflict of interest**

Critics contend that the inherent conflict between any specialty hospital and community hospitals is exacerbated by physician ownership of specialty hospitals and the physicians' ability to select and refer patients.

### **Patient selection**

Much of the financial success of specialty hospitals may revolve around selection of patients. Physicians influence where their patients receive care, and physician ownership gives physician-investors a financial incentive to refer profitable patients to their hospital. If the payment system does not adequately differentiate among patients with different expected costs, and the factors determining cost, such as severity of illness, can be observed in advance, then the physician has an incentive to direct patients accordingly. At the extreme, some community hospitals reported that physicians sometimes transferred patients out of the community hospitals to specialty hospitals that the physicians owned. Referrals of healthier (more profitable) patients to limited-service specialty hospitals may not harm less complex patients. Nonetheless, critics argue that referral decisions should not be influenced by financial incentives, and therefore, they object to physician ownership of specialty hospitals. In addition, studies have found that physicians with ownership interests in other types of facilities order additional services for their patients, and thus induced demand may also be an issue.<sup>10</sup>

### **Legal prohibitions on self-referral**

Restrictions on physician self-referral have a long history in the Medicare program. The two laws below and their implementing regulations set out the basic limitations on self-referral and create exceptions. The primary concern was that self-referral would create financial incentives that could influence physicians' professional judgment and lead to higher use of services. In addition, self-referral could lead to unfair competition if one hospital is owned by the referring physician and competing hospitals are not.<sup>11</sup>

The two key laws are the:

***Anti-kickback statute***—This criminal statute, initially passed in 1972, broadly prohibits the purposeful offer, payment, or receipt of anything of value to induce the referral of patients for services reimbursable by a federal health care program. The Department of Justice is the primary enforcement agency (as it is for all federal criminal statutes), although the Office of Inspector General (OIG) of the Department of Health and Human Services participates through its regulatory and advisory opinion process. Because enforcement requires prosecutors to prove beyond a reasonable doubt that parties involved intended to violate the law, few cases were successfully litigated, and the statute's application to ancillary joint ventures is disputed. In any event, physician ownership of health care ancillary facilities, such as laboratories, was not deterred.

***Ethics in Patient Referrals Act (Stark I and II)***—As passed in 1989 (*Stark I*), this law prohibits physicians from referring Medicare or Medicaid patients for clinical laboratory services to labs with which the physician has a financial relationship (either ownership or compensation) unless the relationship fits within a specified exception. The law also prohibits providers from submitting claims for services provided to patients referred by a physician with whom the provider has a financial relationship. Unlike the anti-kickback statute, the Stark law prohibits certain financial relationships without regard to any intention to induce referrals.

In 1993, the law was amended to expand the prohibitions to a broad array of “designated health services,” including physical and occupational therapy, radiology, radiation, home health care, hospital, outpatient prescription drugs, and many types of medical equipment and supplies. This amended version, commonly called *Stark II*, supplanted the anti-kickback statute as the primary law regulating physician investment in ancillary joint ventures.

The law does not apply to surgical services provided by ambulatory surgical centers.<sup>12</sup> It also allows physicians to provide ancillary services, such as laboratory tests or X-rays, in their offices. Additionally, the law creates a broad exception for physician ownership of hospitals to which they refer Medicare or Medicaid patients. However, the law restricts compensation arrangements (such as consultancies) between physicians and hospitals, as with other providers of designated health services.

The hospital exception requires that the investment of a referring physician be in the whole hospital, rather than a subdivision or part of the hospital, and that the physician be authorized to perform services at the hospital. This exception—known as the “whole-hospital exception”—permits physician investment in whole hospitals because hospitals generally provide a wide array of services. Thus, referrals by an individual physician-investor would theoretically have a limited effect on overall hospital profits. On the other hand, physicians have a greater ability to influence the profits of a single hospital department, which is why investment in hospital departments was prohibited.

At the time of Stark II’s enactment (1993), there were probably far fewer single specialty hospitals than today. According to the GAO, the number of specialty hospitals increased from 29 in 1990 to 92 in 2003; most of these hospitals have physician-investors (GAO 2003b). At least until the MMA imposed a moratorium on new physician-owned specialty hospitals, the legal restrictions on physician self-referral did not inhibit the growth of such hospitals. Physician-investors have a greater opportunity to influence profits at single-specialty hospitals—which generally provide a limited range of services—than at full-service hospitals. Thus, the development of physician-owned specialty hospitals raises questions about whether they should be considered more similar to a hospital department than to a “whole hospital.” (For a more complete discussion of these laws and their histories, see Appendix B.)

## **Do specialty hospitals have lower costs?**

As part of the mandate to examine physician-owned specialty hospitals, the Congress asked MedPAC to determine if differences exist between the costs of health care services furnished to patients by these hospitals and the costs of such services furnished by local full-service community hospitals within specific diagnosis-related groups (DRGs). Evidence showing that specialty hospitals have lower costs would lend support to the “focused-factory” argument that specialization makes specialty hospitals



more efficient. The data available to make this comparison are limited. Data are available for only a small number of specialty hospitals, and those hospitals have not been operating for long. Over time, as the hospitals establish themselves and expand their market share, their relative costs could change.

### Comparison groups

MedPAC defined three comparison groups for our analysis of specialty hospitals:

*Community* hospitals are all hospitals that are:

- located in the same market as specialty hospitals, and
- provide a full range of services. (Thus, they do not include any specialty hospitals.)<sup>13</sup>

*Competitor* hospitals are a subset of community hospitals that are:

- located in the same market as specialty hospitals, and
- provide at least some of the same services provided by specialty hospitals in that market.<sup>14</sup>

*Peer* hospitals are:

- specialized,
- not physician owned, and
- not necessarily located in the same market as specialty hospitals.<sup>15</sup>

The number of competitor and community hospitals far outweighs the number of specialty hospitals (Table 2). Community hospitals represent the largest comparison group. Competitor hospitals, on the other hand, are the group that specialty hospitals most directly compete with because they provide some of the same services in the same market. Peer hospitals are the smallest group; in fact, in the orthopedic hospital category, physician-owned hospitals outnumber peer hospitals. Peer hospitals provide another dimension for comparing specialty hospitals with other hospitals. By being specialized but not physician owned, this group allows us to look for the effects of physician ownership.

**TABLE  
2**

**Number of specialty, peer, competitor, and community hospitals**

Type of specialty hospital	Specialty	Peer	Competitor	Community
Heart	12	36	79	303
Orthopedic	25	17	305	453
Surgical	11	25	237	276

Note: All hospitals in this table had at least 25 Medicare discharges in fiscal year 2002. Specialty hospitals are specialized and physician owned. Peer hospitals are specialized but are not physician owned. Competitor hospitals are in the same markets as specialty hospitals and provide some similar services. Community hospitals are all hospitals in the same market as specialty hospitals.

Source: MedPAC analysis of 2002 MedPAR data from CMS.

**TABLE  
3****Specialty heart hospitals concentrated more on surgical heart cases**

	<b>Specialty</b>	<b>Peer</b>	<b>Competitor</b>	<b>Community</b>	<b>All IPPS</b>
Share of all discharges that are heart cases	80%	50%	29%	27%	29%
Of all heart cases, share that is					
Surgical	66	60	40	29	30
Coronary artery bypass graft	12	10	6	4	4
Angioplasty	23	23	13	9	9

Note: IPPS (inpatient prospective payment system). Specialty hospitals are specialized and physician owned. Peer hospitals are specialized but are not physician owned. Competitor hospitals are in the same markets as specialty hospitals and provide some similar services. Community hospitals are all hospitals in the same market as specialty hospitals.

Source: MedPAC analysis of 2002 MedPAR data from CMS.

Defining three comparison groups enables us to compare hospitals in a variety of ways. For example, we analyzed the degree of specialization in heart cases (Table 3). In specialty heart hospitals, 80 percent of the discharges were heart cases and 66 percent of those heart cases were surgical. The specialty hospitals concentrated more on heart cases than any other comparison group including peer hospitals, which were selected for comparison because of their specialization. Within heart cases, their concentration on surgery, coronary artery bypass grafts (CABGs), and angioplasty was roughly similar to peer hospitals. Among the two comparison groups in the same market—community hospitals and competitor hospitals—competitor hospitals had the greater focus on surgery. This is not surprising because that group was defined as providing some of the same services as specialty hospitals in the same market. (Orthopedic hospitals also showed a predominance of surgical cases, as, of course, did surgical hospitals.)

### **Cost differences between specialty hospitals and community hospitals**

Do specialty hospitals have lower costs than full-service community hospitals? To answer this, we examined Medicare inpatient costs per discharge reported in hospitals' Medicare cost reports for fiscal year 2002. Differences in length of stay (LOS) might be one potentially controllable factor contributing to differences in costs per discharge. Therefore, we also compared average lengths of stay for Medicare patients treated by specialty and comparison hospitals in fiscal year 2002.

#### **Inpatient costs per discharge**

Average Medicare inpatient costs per discharge may differ among hospitals for a number of reasons. For example, we would expect costs to reflect differences in local input prices and in the mix of patients treated and the services provided to care for them. Other differences in hospitals' products also may affect inpatient costs per discharge. For example, inpatient costs per discharge tend to be measurably higher in hospitals that operate residency programs for training physicians or serve a disproportionate share of low-income patients (although the latter effect is small).

After controlling for these potential sources of variation, including patient severity, we found that both the aggregate mean and median values for costs at physician-owned specialty hospitals are higher than the corresponding values for peer, competitor, and community hospitals. However, these differences were not statistically significant (Table 4). Even though the absolute differences in cost sometimes

**TABLE  
4****Costs per discharge in specialty hospitals not lower**

	Number of hospitals	Percentage of national, 2002	
		Aggregate mean	Median
All nonspecialty IPPS hospitals	3,906	100%	100%
Heart hospitals			
Specialty	10	108	108
Peer	35	100	102
Competitor	75	102	103
Community	256	101	99
Orthopedic hospitals			
Specialty	24	117	117
Peer	15	110	116
Competitor	279	102	101
Community	405	101	100
Surgical hospitals			
Specialty	10	133	130
Peer	21	114	103
Competitor	218	99	100
Community	239	99	99

Note: IPPS (inpatient prospective payment system). None of the percentages is significantly different from 100 percent using a Tukey mean separation test with a  $p < .05$  criterion. Costs are adjusted for differences in case mix, severity, local input prices, and the effects of training residents and serving poor patients. The mean is the discharge-weighted average of all hospitals in the group. The median is the value at which 50 percent of hospitals in the group have a higher value and 50 percent have a lower one. Some hospitals are not included because of missing data elements. Specialty hospitals are specialized and physician owned. Peer hospitals are specialized but are not physician owned. Competitor hospitals are in the same markets as specialty hospitals and provide some similar services. Community hospitals are all hospitals in the same market as specialty hospitals.

Source: MedPAC calculations based on data reported in hospitals' fiscal year 2002 Medicare cost reports from CMS.

appear large, we observed large variances in costs per discharge across a small number of hospitals. For that reason, the results are not statistically significant. For example, surgical hospitals may have very few inpatient stays because they have few inpatient beds and most of their business is focused on outpatient procedures.<sup>16</sup> These factors can lead to substantial variation in reported inpatient costs among surgical hospitals.

### Length of stay

In comparing length of stay, we controlled for differences in the mix of patients treated among hospitals using the severity classes of the all-patient refined DRGs (APR-DRGs). We compared each hospital's actual LOS with an expected LOS, based on its mix of cases and regional average. We used the regional average as the standard because specialty hospitals and their peers are not spread uniformly across all geographic regions, and we know that LOS patterns differ across regions. Our analysis shows that specialty hospitals appear to keep patients for shorter-than-expected stays (Table 5, p.16).

Actual lengths of stay were 17 percent to 31 percent lower than regional averages, depending on the type of specialty hospital. Moreover, specialty hospitals' lengths of stay were often significantly shorter, relative to the expected average, than those for peer hospitals.

**TABLE  
5****Specialty hospitals have shorter length of stay**

Hospital group	Number of hospitals	Actual length of stay (days)	Expected length of stay based on regional averages (days)	Ratio of actual-to-expected length of stay
All nonspecialty IPPS hospitals	4,375	5.6	5.6	100%
Heart hospitals				
Specialty	12	4.0	4.8	83 <sup>a</sup>
Peer	36	6.1	5.9	103
Competitor	79	5.6	5.5	101
Community	315	5.2	5.2	99
Orthopedic hospitals				
Specialty	25	3.0	3.9	78 <sup>ab</sup>
Peer	17	5.1	4.9	105
Competitor	305	5.6	5.4	103
Community	477	5.5	5.4	102
Surgical hospitals				
Specialty	11	2.3	3.3	69 <sup>b</sup>
Peer	25	4.5	4.6	98
Competitor	237	5.0	5.2	96
Community	289	5.0	5.2	96

Note: IPPS (inpatient prospective payment system). Actual average length of stay (LOS) is based on total Medicare days per discharge, where discharges are adjusted to reflect cases transferred to another acute care hospital or certain post-acute care settings. Expected LOS values are based on regional average LOS values for severity classes within each all-patient refined diagnosis-related group (APR-DRG) and hospitals' mixes of Medicare discharges among APR-DRG severity classes. Regions are defined by the nine Census divisions. Specialty hospitals are specialized and physician owned. Peer hospitals are specialized but are not physician owned. Competitor hospitals are in the same markets as specialty hospitals and provide some similar services. Community hospitals are all hospitals in the same market as specialty hospitals.

<sup>a</sup> Significantly different from the actual-to-expected ratio for peer hospitals using Tukey mean separation test and  $p < .05$  criterion.

<sup>b</sup> Significantly different from the actual-to-expected ratio for nonpeer community hospitals using the Tukey mean separation test and a  $p < .05$  criterion.

Source: MedPAC analysis of data from the MedPAR file for fiscal year 2002.

Heart specialty hospitals have significantly lower ratios of actual-to-expected LOS (0.83) compared with peer heart hospitals, which are above the average (1.03). Although the ratio for physician-owned heart hospitals is also lower than that for all community hospitals (1.0), the difference was not significant. Orthopedic specialty hospitals had lengths of stay that were 22 percent shorter than expected and significantly lower than those in either peer orthopedic or community hospitals. Surgical hospitals have stays that are 31 percent lower than expected, given their case mix. Although their ratio of actual-to-expected LOS is lower than those for peer and community hospitals, the difference is significant only when compared with community hospitals.

Lengths of stay in specialty hospitals were shorter, in some cases significantly so, than those in comparison hospitals. Although standardized costs per discharge were higher in specialty hospitals than in the comparison hospitals, those differences were not statistically significant. Other things being equal, shorter stays should lead to lower costs. The apparent inconsistency of these results raises questions about what other factors might be offsetting the effects of shorter stays. Such factors might include staffing levels,

employee compensation, costs of supplies and equipment, or lack of potential economies of scale due to smaller hospital size. Some specialty hospital representatives report that they thought their costs were above average due to high capital costs, including interest expense on funds borrowed to cover operating losses in the facilities' early years of operation. These results could change as the hospitals become more established and as the number of specialty hospitals reporting costs and claims increases.

## **Payer mix, utilization, and the impact on community hospitals**

In this section we evaluate whether physician-owned specialty hospitals have a payer mix that differs from that of community hospitals. We also evaluate whether the opening of specialty hospitals has led to increases in Medicare admissions. We then examine the financial impact of physician-owned specialty hospitals on community hospitals.

Critics of specialty hospitals contend that physicians have financial incentives to steer profitable patients to specialty hospitals in which they have an ownership interest. These physicians may also have an incentive to avoid Medicaid, uninsured, and unusually costly Medicare patients. Critics further argue that if physician-owned hospitals take away a large share of community hospitals' profitable patients, community hospitals would not have sufficient revenues to provide all members of the community access to a full array of services. Supporters counter that the specialty hospitals are engaging in healthy competition with community hospitals and that they are meeting unmet demand for services. They acknowledge that community hospital volumes may decline when they enter a market, but claim that community hospitals can find alternative sources of revenue and remain profitable even in the face of competition from physician-owned specialty hospitals.

We present evidence that supports the following findings:

- Physician-owned heart, orthopedic, and some surgical hospitals tended to treat fewer Medicaid patients than peer hospitals and community hospitals in the same market. Heart hospitals treated primarily Medicare patients, while orthopedic and surgical hospitals treated primarily privately insured patients.
- The increases in cardiac surgery rates associated with the opening of physician-owned heart hospitals were small enough to be statistically insignificant for most types of cardiac surgery. So it appears that specialty hospitals obtained most of their patients by capturing market share from community hospitals.
- Though the opening of heart hospitals was associated with slower growth in Medicare inpatient revenue at community hospitals, most community hospitals competing with physician-owned heart hospitals did not experience unusual declines in their all-payer profit margin.

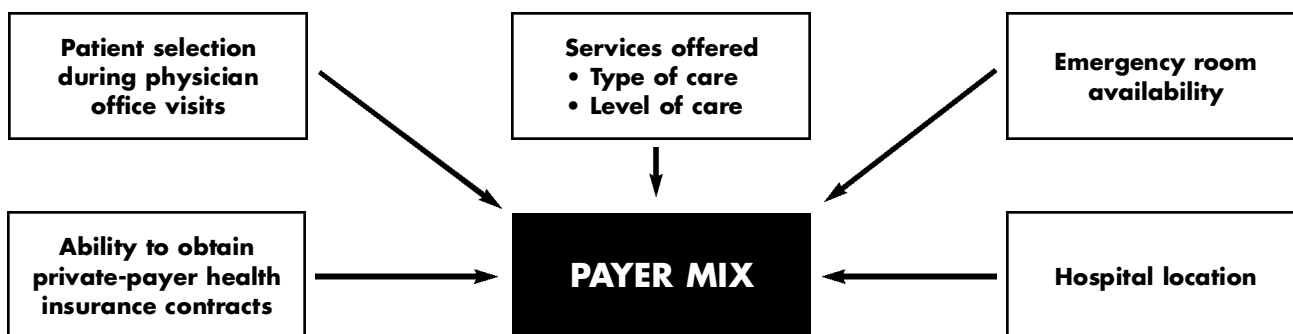
Note that most specialty hospitals are relatively new and the number of hospitals in our analysis is small. The impact on utilization and community hospitals could change over time, especially if a large number of additional specialty hospitals are formed.

### **Payer mix**

A specialty hospital may have a different mix of payers—private insurers, Medicare, Medicaid, and self-pay—than competing community hospitals. Such differences may stem from the hospital's location, the presence and staffing of an ED, the mix of services offered, selective contracting with insurers, or

**FIGURE 2**

**Reasons why payer mix may differ at specialty hospitals**



physicians’ efforts to steer patients (Figure 2). For example, hospitals that do not offer obstetric services may have fewer Medicaid patients, and hospitals without emergency rooms may treat fewer self-pay patients. Further, as discussed, physician-owners with admitting privileges at both the community hospital and their own specialty hospital have a financial incentive to fill their hospital with better-paying patients and steer unprofitable patients to the community hospital.

Referral networks may also affect payer mix. For example, the specialty hospital may take all prospective patients, but they may cultivate relationships with family practitioners and internists who do not. On our site visits, one specialty hospital told us that its referral base included practices with very few indigent and Medicaid patients. Thus, specialists who own the specialty hospital may not need to actively select patients based on their insurance status—it may already have been done for them.

**TABLE 6**

**Specialty hospitals have lower shares of Medicaid discharges**

Type of hospital	Number of hospitals	Share of hospital discharges		
		Medicare	Medicaid	All other
All nonspecialty IPPS hospitals	4,247	36%	15%	50%
Heart hospitals				
Specialty	12	62	4	34
Peer	36	40	12	48
Community	303	31	15	54
Orthopedic hospitals				
Specialty	25	33	1	65
Peer	17	35	5	59
Community	453	35	16	49

Note: IPPS (inpatient prospective payment system). Specialty hospitals are specialized and physician owned. Peer hospitals are specialized but are not physician owned. Competitor hospitals are in the same markets as specialty hospitals and provide some similar services. Community hospitals are all hospitals in the same market as specialty hospitals. Totals may not sum to 100% due to rounding.

Source: MedPAC analysis of 2002 Medicare cost reports.

### The share of Medicaid patients differs

We analyzed discharge volumes at physician-owned hospitals, community hospitals in the same markets as the specialty hospitals, and peer hospitals. When looking at physician-owned heart hospitals, we found that these hospitals tended to treat fewer Medicaid patients (4 percent) than both our national sample of peer hospitals (12 percent) and community hospitals (15 percent) in the same market (Table 6). Similarly, physician-owned orthopedic hospitals (16 percent) treated fewer Medicaid patients (1 percent) than peer (5 percent) or community hospitals in the same market.<sup>17</sup> Some specialty hospitals attributed their low rates of Medicaid patients to being excluded from Medicaid HMO contracts.

In addition to examining mean values, we looked at median and maximum values for the various groups. The maximum Medicaid share among the 12 physician-owned heart hospitals in our study (6 percent) is lower than the median (7 percent) for peer hospitals. The largest Medicaid share among orthopedic hospitals was 11 percent of discharges, indicating that at least one physician-owned specialty hospital has a Medicaid share above the average for peer orthopedic hospitals. Our findings are similar to those of the GAO, which indicated that specialized hospitals tend to have lower shares of Medicaid patients.<sup>18</sup>

### The share of self-pay revenue and charges

Because the cost report data we used do not distinguish between privately insured and self-pay patients, we gathered data on revenues (net of discounts and allowances) using a telephone survey of specialty and peer hospitals to examine payer mix in more detail (see Appendix C for a discussion of the survey methodology). Although specialty heart hospitals with EDs tended to have higher shares of revenue from self-pay patients than specialty hospitals without EDs, the differences are not statistically significant (Table 7).

Heart hospitals derive most of their revenue from Medicare patients (almost 60 percent). Orthopedic and surgical specialty hospitals tended to derive their revenue from patients with private insurance (64 percent). The survey also confirmed that orthopedic and surgical hospitals have lower shares of Medicaid revenue than peer hospitals (5 percent versus 9 percent).

**TABLE  
7**

**Specialty hospitals have lower shares of Medicaid revenues**

Type of hospital	Number of hospitals	Share of hospital revenues			
		Medicare	Medicaid	Private insurance	Self-pay
Heart hospitals					
Specialty without ED	4	58%	2%	38%	2%
Specialty with ED	8	57	3	35	5
Peer	8	50	8	37	5
Orthopedic and surgical hospitals					
Specialty	29	25	5	64	5
Peer	13	33	9	54	5

Note: ED refers to an emergency department staffed by on-site physicians, as opposed to an ED staffed by on-call physicians. Of the 29 physician-owned orthopedic and surgical hospitals, only 1 had an ED staffed by on-site physicians, and its payer mix was similar to that of other orthopedic and surgical hospitals. Surgical hospitals specializing in women's care (whose Medicaid shares could be quite different from other surgical hospitals) are excluded. Specialty hospitals are specialized and physician owned. Peer hospitals are specialized but are not physician owned. Totals may not sum to 100% due to rounding.

Source: MedPAC National Survey of Specialty Hospitals, 2004.

A low share of self-pay revenues might occur if a hospital treated few self-pay patients or if the revenues received from the self-pay patients admitted were low relative to their total charges. During our site visits, some physicians told us that self-pay patients at orthopedic and surgical hospitals are more likely to pay a sizable share of their bills, compared with the self-pay patients at community hospitals. For example, if a hospital does a moderate amount of plastic surgery for which it receives full charges, it may have more self-pay revenue than the hospital that treats large numbers of indigent patients in its emergency department. To examine the mix of self-pay patients without the confounding effect of differing payment rates, we examined shares of hospital charges by type of payer at the site-visit hospitals and compared these with a national sample of hospitals. In the three specialty hospital markets we visited, Medicaid and self-pay patients made up a smaller share of the specialty hospitals' charges compared with community hospitals. Though consisting of a small sample, the site-visit data tell a story that is consistent with our examination of discharge data, revenue data, and GAO's findings.

### **Financial incentives to admit patients differ by patient characteristics**

Opponents of physician-owned hospitals stress that physicians who invest in hospitals have a financial incentive to admit profitable patients to the hospital they own. In response, specialty hospital advocates counter that each physician owner's share of the hospital's profit is insignificant, since most investing physicians only have between a 1 and 5 percent ownership in the hospital. They argue that professional fees may be large enough to induce some physicians to increase utilization, but hospital ownership does not create enough of an additional financial incentive to induce higher utilization.

Although the incremental income from ownership may not be large relative to each physician's annual income, the incentive for a group of physician-investors to increase admissions can be substantially larger than specialty hospital advocates suggest. Specialty hospital advocates omit two key factors when discussing the profits associated with increasing admissions. First, a large share of hospital costs are fixed over the short run—that is, they do not increase when an additional patient is admitted to a hospital with excess capacity (Ennis et al. 2000). By filling an empty bed with a patient, the hospital's additional expense will be limited to the costs that vary with the admission, such as supplies, devices, and additional nursing hours to care for the patient. When payments exceed these variable costs, the remaining marginal profit accrues to the hospital and its owners. These marginal profits represent the incentive to admit specific types of patients.

Second, physicians together own at least a 30 percent interest in most physician-owned specialty hospitals. By being part of a group of physicians that admit most of their patients to the specialty hospital, each physician receives not only the profits from his own patients but also a share of the profits from the other physicians' patients. For example, if 10 cardiologists each have a 3 percent interest in a hospital (30 percent in total), they will receive 3 percent of the marginal profits from all 10 cardiologist-investors' patients. Receiving 3 percent of the profits from 10 cardiologists' patients is equivalent to a single cardiologist receiving 30 percent of the marginal profits from his own patients (assuming the cardiologists admit equally profitable patients with equal frequency). (See text box opposite.)

### **Do heart hospitals increase utilization of profitable heart surgeries?**

Investors in heart hospitals have a stronger incentive to increase utilization of surgeries with a high marginal profit and a weaker incentive to increase utilization of services with low marginal profits. If the entry of a heart hospital into a market is followed by an increase in the volume of profitable admissions in that market, but not unprofitable admissions, that increase would suggest that some physicians are following their financial incentives.



## For DRGs with high marginal profits, financial incentives to increase utilization can exceed \$1,000 per admission

What is the order of magnitude of physicians' financial incentives to increase utilization when they own a hospital? What follows is a hypothetical example of the marginal profit associated with a group of cardiologists each referring just one additional patient (above the current patient load) for coronary artery bypass graft (CABG) surgery.

In fiscal year 2002, the base payment for CABG surgery with cardiac catheterization (DRG 107) was roughly \$24,000. Our examination of Medicare cost reports and hospital financial statements suggests that variable costs equal approximately 60 percent of the DRG payment, roughly \$14,400. Hence the *marginal* profit—payments minus variable cost—would be \$9,600 per patient (\$24,000–\$14,400). If 10 cardiologists owned a 3 percent interest each and they all induced one additional surgery per year, each cardiologist's income would increase by \$2,880 ( $\$9,600 \times 3\% \times 10$ ). The degree to which physicians will alter their behavior when faced with financial incentives of this magnitude is not clear.

Note that variable costs consist of only costs that vary with patient volume and do not include fixed costs (such as depreciation and interest costs). Hospitals will use the marginal profits on their first patients to cover the hospital's fixed costs, which prevents the owners from having to absorb hospital losses. After the hospital's fixed costs are covered, the remaining marginal profits of \$9,600 per CABG patient would accrue to the owners of the facility. ■

We examine utilization at the market level rather than at the hospital level to control for shifting of market shares from community hospitals to the specialty hospital. Markets are defined as the 306 hospital referral regions (HRRs) in the Dartmouth Atlas of Healthcare (Wennberg et al. 1999). We identified 10 markets that gained a physician-owned heart hospital between 1997 and 2001. In these 10 markets, the physician-owned specialty hospitals captured between 20 and 45 percent of the market for cardiac surgeries in 2002.

We examined growth rates of several types of cardiac surgeries. Specifically, we examined whether markets with physician-owned heart hospitals had above-average increases in per capita use rates for Medicare beneficiaries of:

- All cardiac surgeries
- CABG surgeries (a higher marginal profit surgery)
- Angioplasty (a moderate marginal profit surgery)
- Defibrillator implantation (a lower marginal profit surgery)

Bypass surgery appears to have had high marginal profits in 2002, considering its relatively large DRG payment (roughly \$24,000 in 2002) and relatively small device and supply costs. Angioplasty appears to have been moderately profitable in 2002, considering its moderate DRG payment (roughly \$10,000 in 2002) and moderate device costs.<sup>19</sup> Defibrillator implantation appears to have generated little profit (or possibly a loss) in 2002 due to the high cost of purchasing defibrillators relative to Medicare reimbursement in 2002.<sup>20</sup>

We want to stress that we were not testing whether more surgeries equate to better care or better outcomes. We were only examining whether the opening of a physician-owned heart hospital was followed by an unusually large increase in either the volume of cardiac surgeries or a shift toward performing surgeries that are relatively more profitable. By comparing rates of change in markets with physician-owned heart hospitals to markets without physician-owned heart hospitals, we can control for national changes in technology and practice patterns.

Taken together, our findings suggest that physician-owned specialty hospitals may affect practice patterns, but their effect is smaller than nationwide trends, such as growth in angioplasty and defibrillator implantation.

Between 1996 and 2002, heart surgeries for Medicare beneficiaries grew by 5.5 surgeries per 1,000 beneficiaries in markets with physician-owned hospitals and 4.4 surgeries per 1,000 beneficiaries in

**TABLE  
8**

**Growth in rates of Medicare cardiac admissions in markets with and without heart hospitals**

Type of discharge by market	Rate per 1,000 beneficiaries		
	1996	2002	Difference
Heart surgery			
Markets with heart hospitals	26.4	31.8	5.5
Other markets	27.1	31.5	4.4
Medical cardiac			
Markets with heart hospitals	60.2	61.5	1.4
Other markets	69.7	70.8	1.1
Coronary artery bypass graft			
Markets with heart hospitals	5.3	4.8	-0.5*
Other markets	5.6	4.6	-0.9*
Angioplasty			
Markets with heart hospitals	7.6	11.5	3.9
Other markets	7.3	10.8	3.5
Defibrillator implantation			
Markets with heart hospitals	0.4	1.0	0.6
Other markets	0.4	1.2	0.8

Note: 10 markets with heart hospitals, 295 other markets. The sum may not equal the total of components due to rounding.  
\* Growth rates in markets with heart hospitals were significantly different from other markets using a t-test with a p<.05 criterion.

Source: MedPAC analysis of 1996 and 2002 MedPAR data from CMS.

markets without physician-owned hospitals. The difference of 1.1 surgeries per 1,000 beneficiaries—equivalent to a 4 percent increase in the number of heart surgeries—was not statistically significant (Table 8). Because most heart hospitals are relatively new, it is possible that utilization in their markets will increase faster in the future. As community hospitals recruit their own competing cardiologists, increases in utilization may be larger than we saw through 2002. Surgical discharges grew faster than medical discharges in all markets.

We also examined whether the entrance of a physician-owned heart hospital into a market increased the volume of highly profitable surgeries (e.g., CABG) more than relatively less profitable surgeries (e.g., defibrillator implantation). Specifically we find:

- CABG surgeries declined everywhere due to the substitution of angioplasties for this procedure (Wennberg et al. 2004). However, the rate of CABG surgeries per 1,000 beneficiaries declined more slowly in heart hospital markets than in other markets. The difference is statistically significant.
- The rate of angioplasties, a service with modest profit potential, rose rapidly in both types of markets. Although the growth rate was slightly higher in heart hospital markets, the difference in growth rates was not statistically significant.
- The rate of defibrillator implantation, the service that may have been unprofitable in 2002, also grew rapidly, but not as rapidly in markets with heart hospitals. The difference is not statistically significant.

The small changes in utilization are always in the direction that would be predicted by looking at financial incentives.

The markets with physician-owned heart hospitals only had 4 percent more surgeries than otherwise would be expected, even though physician-owned hospitals captured between 20 and 45 percent of the cardiovascular surgeries in their markets. Thus, physician-owned heart hospitals have obtained most of their patients by taking market share away from community hospitals.<sup>21</sup> The shift in market share raises the question of how the loss of cardiac patients affects community hospitals' profitability.

### **Little impact on community-hospital profitability through 2002**

Community hospitals in markets with physician-owned specialty hospitals complain of declining profitability. To assess the impact of physician-owned hospitals on community hospitals' financial performance, we examined whether the profit margins of community hospitals in markets with physician-owned specialty hospitals declined compared with those of community hospitals in markets without physician-owned specialty hospitals.

We identified 8 heart hospitals and 14 orthopedic and surgical hospitals that were formed between 1998 and 2001. Thirty-five community hospitals compete with the eight heart hospitals for open-heart surgery and angioplasty cases. Fifty community hospitals compete with the 14 orthopedic and surgical hospitals (Table 9, p. 24). For these 85 competitor hospitals, we examined changes in community hospital profit margins from 1997 (before physician-owned hospitals opened) to 2002 (after physician-owned hospitals opened). We compared the changes in these competitor hospitals' profits with changes in profitability of 2,132 community hospitals in markets without physician-owned specialty hospitals. Full-service hospitals

**TABLE  
9**

**Hospitals' all-payer margins changed similarly in markets with and without specialty hospitals**

Hospital group	Number of hospitals	All-payer margins		
		1997	2002	Difference
<b>Markets with specialty hospitals</b>				
Hospitals competing with:				
Heart hospitals	35	6.4%	3.4%	- 3.0%
Orthopedic or surgical hospitals	50	6.6	5.6	- 1.0
<b>Markets without specialty hospitals</b>				
All IPPS hospitals with over 65 beds	2,132	6.4	2.7	- 3.7

Note: IPPS (inpatient prospective payment system). The competitors to orthopedic and surgical hospitals do not include hospitals that compete with heart hospitals. We present medians rather than means to limit the influence of outliers. We only look at hospitals with 65 or more beds to make community hospitals in markets without specialty hospitals comparable to competitor hospitals. Competitor hospitals are in the same markets as specialty hospitals and provide some similar services.

Source: MedPAC analysis of 1997 and 2002 Medicare cost reports from CMS.

that compete with specialty hospitals had changes in all-payer margins that were similar to changes in other community hospitals, suggesting that they were able to “make up” lost revenue from other sources or reduce their costs.

In addition to the descriptive statistics shown in Table 9, we ran multivariate models that controlled for other market influences (such as changes in population). The multivariate model of Medicare revenues indicated that Medicare inpatient revenue in community hospitals grew more slowly when they had to compete with a physician-owned heart hospital. (The effect for hospitals competing with orthopedic and surgical hospitals was not statistically significant, possibly because of the small size of those hospitals.) In addition, the multivariate model of total profit margins indicated that community hospitals did not have an unusual decline in their total margins, which supports the descriptive statistics in Table 9.

If heart hospitals are taking patients from community hospitals, how did community hospitals avoid unusually large declines in total profit margins? From our site visits, we learned that community hospitals used various strategies to compensate for the loss of cardiac revenue. Some hospitals lowered their expenses by cutting staff; others instituted aggressive pricing strategies to raise revenue from private payers. Many noted their expansions into areas they view as profitable, such as imaging, rehabilitation, pain management, and neurosurgery. Through such efforts, these hospitals were often able to compensate for the revenue lost to physician-owned specialty hospitals.

If physician-owned specialty hospitals continue to grow rapidly, however, community hospitals may find it more difficult to compensate for the loss of patients. Rural community hospitals that already have low volumes of surgical cases may find it particularly difficult to compensate for the lost patient revenue. Our findings reflect a small number of hospitals in an early stage of development. The magnitude of our findings could change as more data become available.

## **Do specialty hospitals treat a favorable mix of patients?**

The Congress, other policymakers, and many providers are concerned that Medicare's IPPS for acute care hospitals may encourage patient selection and the formation of specialty hospitals. The current structure of the IPPS may create financial incentives to specialize in certain DRGs and, within them, to selectively admit low-cost patients. The IPPS would encourage such selection if profits were typically higher for some DRGs than for others, and if payments were not adequately adjusted to reflect the higher costs generally incurred in treating sicker patients. Conventional wisdom holds that cardiac surgery and orthopedic cases are among the most profitable for hospitals, and findings from a GAO study indicate that specialty hospitals had a favorable selection of patients in 2001.<sup>22</sup>

Our analysis supports the following findings:

- Under Medicare's IPPS, DRGs that were common in specialty heart hospitals—primarily surgical DRGs—were relatively more profitable than the national average DRG (see text box on page 26 for the definition of relative profitability). Medical cardiovascular DRGs, which were found less frequently in specialty heart hospitals, tended to be less relatively profitable than the average DRG. The most common orthopedic surgery DRGs tended to be relatively less profitable than the average DRG, but relatively more profitable than medical orthopedic DRGs. The most common surgical DRGs found at specialty surgical hospitals were about as profitable as the average DRG.
- Within DRGs, the least severely ill Medicare patients generally were relatively more profitable than the average Medicare patient. More severely ill patients generally were relatively less profitable than average, reflecting their higher costs but identical payments. Specialty hospitals had lower severity patient mixes than peer, competitor, or community hospitals.
- Taking both the mix of DRGs and of patients within DRGs into account, specialty hospitals would be expected to be relatively more profitable than peer, competitor, or community hospitals.

### **Medicare's inpatient prospective payment system encourages selection across and within DRGs**

Discrepancies between Medicare's payment rates and hospitals' average costs per discharge across DRGs result in differences in profitability. These profitability differences create financial incentives—for all hospitals, specialty and nonspecialty alike—to specialize in treating relatively profitable DRGs. Similarly, differences in profitability across patients of varying illness severity would give hospitals financial incentives to select the less severely ill (and less costly) patients within DRGs. Because the coexisting medical conditions that affect severity (and cost) are known and somewhat predictable, hospitals could obtain a favorable mix that was likely to be relatively profitable if physicians had a choice of hospitals to which they could admit patients and incentives to do so.

Under Medicare's IPPS, hospitals generally are paid a predetermined amount per discharge. The payment rate for each case is intended to reflect the expected cost of treating the specific type of patient, taking into account the hospital's market circumstances and certain other factors (see text box, p. 28). In this system, substantial differences in profitability across and within DRGs may arise primarily from problems with the DRG definitions, the DRG relative weights, and the outlier policy.

## Terms used in examining profitability and patient selection

**Relative profitability ratios.** Relative profitability compares the national average inpatient Medicare profitability of one patient category (diagnosis-related group [DRG] or all-patient refined DRG [APR–DRG]) with the national average inpatient profitability of all Medicare discharges. The profitability of a given DRG, for example, is defined as the ratio of total payments for all Medicare patients in the category to the total costs hospitals incur in treating the same patients (see Appendix C). A similar measure of profitability is defined for all Medicare patients whose care is paid for under the IPPS. The relative profitability of a specific DRG is defined as the profitability for that DRG divided by the overall average profitability of all IPPS patients. For example, if the average payment-to-cost ratio over all IPPS patients were 1.04, and the payment-to-cost ratio for DRG 107 averaged 1.10 (payments were 10 percent above costs), then the relative profitability of DRG 107 would be  $1.10/1.04$ , or 1.06 times the national average. The relative payment-to-cost ratio for each APR–DRG severity class combination is computed using the same method.

**Expected relative profitability.** An expected relative profitability ratio refers to the average relative profitability we would expect a hospital (or hospital group) to have based on the mix of patients it treats and the national average relative profitability of each patient category. For example, if a hospital treated two patients and one was in a DRG with an average relative profitability ratio of 1.00 and the other was in a DRG with an average profitability ratio of 1.10, then the hospital's expected relative profitability would be equal to 1.05. These ratios are used to compare the financial desirability of the mixes of patients treated—whether the mix of patients is favorable or unfavorable—for hospitals of average efficiency and costs. Because the measure uses national average relative profitability ratios, the variation in the measure reflects differences in the mix of patients; it does not measure differences in hospitals' actual relative profitability. ■

When DRGs are defined too broadly they fail to isolate differences in severity of illness that substantially affect the cost of hospital inpatient care. The resulting differences in profitability within DRGs create financial incentives for hospitals to select relatively low-cost patients, such as those who have the same diagnosis but are less severely ill.

The DRG relative weights, which are based on the national average of hospitals' charges billed to Medicare for patients in each DRG, might over- or understate the expected cost differences across DRGs.<sup>23</sup> Weights based on hospitals' charges might not accurately reflect the relative cost of treatment for several reasons. Hospitals may raise their charges at different rates for different services. The results from MedPAC's survey of hospitals' charging practices suggest that hospitals use diverse strategies for setting service charges and raising them over time (Worzala and Ashby 2004). Data from hospitals' Medicare cost reports indicate that markups tend to be systematically higher for ancillary services (for example, operating room time, imaging services, and supplies) than for routine services (for example, room, board, and routine nursing care). Consequently, over time, the weights for DRGs in which patients typically use a lot of ancillary services might have become too high compared with the actual relative cost of care. Weights for DRGs in which patients use primarily routine and special care services (intensive care) might have become too low.

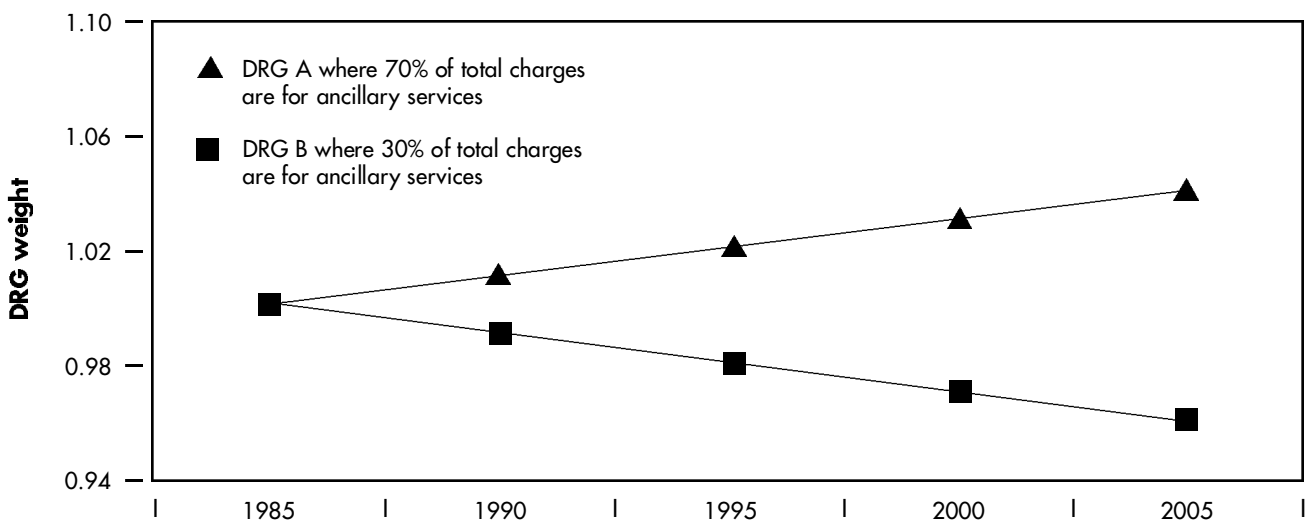
Over time, if charges for some services increase faster than charges for other types of services, DRG relative weights will diverge—even though the underlying costs do not. For example, if patients in different DRGs used different mixes of routine and ancillary services and if hospitals were to raise their charges for these service categories at different rates over time, within a few years the relative weights would begin to diverge from the underlying costs. The relative weights for DRGs with high ancillary service use would increase, while the relative weights for DRGs with high routine service use would fall—even though the costs were increasing at the same rate.

Hypothetically, over time these differential markups will affect the payment-to-cost ratio (hence the relative profitability) of DRGs (Figure 3). Assuming identical overall growth rates for costs and payments, a 1 percent differential in the growth rates for ancillary and routine charges will, over 20 years, produce a difference of 8 percentage points in relative profitability between these DRGs.

Similarly, distortions in the relative weights may arise if average treatment costs change at different rates across DRGs but hospitals do not adjust their charges accordingly. For example, costs per discharge in two DRGs might change at different rates if a new technology decreased length of stay in only one, while their charges grew at the same rate. As a result, patients in one DRG would become relatively more profitable, on average, while patients in the other category would become relatively less profitable.

Relative weights also may become distorted if markups or costs differ substantially among hospitals. Relative weights for some DRGs would be inflated if their patients were more likely to be treated in hospitals with high markups or high costs. Likewise, relative weights would be deflated for DRGs in which patients were more often treated in hospitals that have low markups or low costs.

**FIGURE 3** Illustration of divergence in DRG relative weights when ancillary charges rise faster than routine charges



Note: DRG (diagnosis-related group). Assumes the following: Ancillary charges rise by 5 percent per year, routine charges rise by 4 percent per year, all costs rise by 4 percent per year, and total Medicare inpatient payments rise by 4 percent per year.

Another source of distortions in the relative weights may come from the method the IPPS uses to account for exceptionally costly (outlier) cases. It may overstate the relative costliness of the DRGs in which outliers occur, again resulting in differences in profitability across DRGs. An outlier case is defined as any case that results in a large loss—more than \$21,025 in fiscal year 2002 and \$25,800 in 2005. Outlier cases tend to concentrate in high-cost DRGs because large losses are more likely to occur where the average cost per case is high. For example, to qualify as an outlier in 2002, a patient with chest pain (average payment of about \$2,500) needed to be 10 times more costly than the average for that DRG. In contrast, a patient who had a cardiac defibrillator device implanted with cardiac catheterization (average payment of about \$30,000 in 2002) only needed to be twice as costly as the average patient in that DRG. However, the high charges associated with outlier cases are largely included in the calculation of the DRG relative weights.<sup>24</sup> Consequently, the relative weights may be overstated in DRGs with many outliers, and those relative weights apply to all cases in the DRG, nonoutlier cases and outlier cases alike.

### **Determining payment rates in the Medicare hospital inpatient prospective payment system**

Medicare determines the payment rates in its inpatient prospective payment system (IPPS) for acute care hospitals in several steps:

CMS defines more than 500 diagnosis-related groups (DRGs) based on the clinical condition (principal and other diagnoses) and procedures performed.

CMS assigns a relative weight to each DRG that is intended to reflect the relative costliness of typical patients in that group compared with the cost of treating the average Medicare patient.

CMS sets a national base payment amount per discharge, which represents what Medicare will pay for a case with a relative weight of 1.0.

The national base payment amount is adjusted (primarily by a wage index) to account for differences in the levels of input prices that hospitals have to pay in local markets.

The DRG payment rate for any case is obtained by multiplying the adjusted national base payment amount per discharge for the hospital's market area (calculated in the previous step) by the relative weight for the DRG.

Payment rates for teaching hospitals and those that serve disproportionate shares of low-income patients are increased to reflect hospital-specific percentage add-ons—indirect medical education (IME) and disproportionate share hospital (DSH) payments—intended to support those activities. Certain rural hospitals that historically had high levels of costs receive add-on payments that are intended to preserve access to care for local beneficiaries.

Under certain circumstances, the payment rates are altered for individual cases. When a patient is transferred early to another IPPS hospital or to certain post-acute care settings, a daily payment is made. When a patient turns out to be extraordinarily costly, the hospital receives additional so-called outlier payments. ■



## Relative profitability across and within DRGs

We found that average relative profitability varied considerably by DRG and masked even larger differences in relative profitability by level of severity for patients within each group, as measured by the APR–DRG classification system.<sup>25</sup> The range in the relative profitability of cases within DRGs reflects the differences in costs associated with treating patients with varying severity of illness. These variations in severity of illness within DRGs are currently not adequately recognized by the IPPS, with its single price for each DRG. (The IPPS was designed essentially assuming that each hospital would have an average mix of patients within each DRG. The advent of specialty hospitals highlights the limitation of that design.) The wide spread in relative profitability indicates the opportunities hospitals have to benefit financially from patient selection.

### Cardiovascular conditions

Across selected cardiovascular conditions, we found that relative profitability varied considerably by DRG (Table 10).<sup>26</sup> For example, cases in DRG 122 had a relative profitability ratio of 0.89, meaning that the payment-to-cost ratio for the average Medicare case in this category was 11 percent less than the average for all Medicare cases. The relative payment-to-cost ratio for DRG 517 was almost 16 percent above the average. As shown earlier in Table 3, surgical DRGs account for 66 percent of cardiac discharges at specialty heart hospitals and 60 percent of cardiac discharges at peer heart hospitals. With one exception (DRG 116), all of the surgical DRGs had high relative profitability ratios. In contrast, the relative profitability ratios for the medical cardiovascular categories were all below 1.00, meaning that patients in these categories have less-than-average relative profitability.

**TABLE  
10**

**Estimated relative profitability for selected cardiovascular DRGs**

DRG	DRG title	Relative profitability ratio
<b>Surgical DRGs</b>		
104	Cardiac valve and other major cardiothoracic procedure with cardiac catheterization	1.12
105	Cardiac valve and other major cardiothoracic procedure without cardiac catheterization	1.06
107	Coronary bypass with cardiac catheterization	1.09
109	Coronary bypass without PTCA or cardiac catheterization	1.04
516	Percutaneous cardiovascular procedure with AMI	1.10
517	Percutaneous cardiovascular procedure with coronary artery stent without AMI	1.16
518	Percutaneous cardiovascular procedure without coronary artery stent or AMI	1.12
116	Other permanent cardiac pacemaker implantation	0.97
<b>Medical DRGs</b>		
121	Circulatory disorders with AMI and major complication, discharged alive	0.92
122	Circulatory disorders with AMI without major complication, discharged alive	0.89
127	Heart failure and shock	0.94
138	Cardiac arrhythmia and conduction disorders with complications or comorbidities	0.91

Note: DRG (diagnosis-related group), PTCA (percutaneous transluminal coronary angioplasty), AMI (acute myocardial infarction). Relative profitability compares the national average inpatient Medicare profitability of one patient category (DRG) with the national average inpatient profitability of all Medicare discharges. The relative profitability measure is an average for each DRG category, based on cost accounting data. Thus, small differences (for example, 1 percent or 2 percent) in relative profitability among DRGs may not be meaningful.

Source: MedPAC analysis of Medicare hospital inpatient claims and cost reports from CMS, fiscal year 2000–2002.

Turning to the relative profitability of Medicare heart patients within DRGs, we found that in every cardiac DRG we analyzed, the least severely ill patients (severity class 1) and patients with moderate severity (class 2) had above average relative profitability ratios (Table 11). Conversely, the most severely ill patients (class 4) had less than average relative profitability.

**TABLE  
11**

**Estimated relative profitability for selected APR-DRGs and severity classes: cardiovascular**

APR-DRG	DRG	DRG title	Relative profitability ratio by APR-DRG severity class			
			1	2	3	4
<b>Surgical DRGs</b>						
8	104	Cardiac valve and other major cardiothoracic procedure with cardiac catheterization	1.61	1.46	1.17	0.87
163	105	Cardiac valve and other major cardiothoracic procedure without cardiac catheterization	1.44	1.28	1.04	0.79
165	107	Coronary bypass with cardiac catheterization	1.47	1.27	1.04	0.79
166	109	Coronary bypass without PTCA or cardiac catheterization	1.34	1.18	0.95	0.72
174	516	Percutaneous cardiovascular procedure with AMI	1.39	1.23	0.93	0.82
175	517	Percutaneous cardiovascular procedure with coronary artery stent without AMI	1.41	1.19	0.87	0.71
	518	Percutaneous cardiovascular procedure without coronary artery stent or AMI				
171	116	Other permanent cardiac pacemaker implantation	1.20	1.02	0.80	0.61
<b>Medical DRGs</b>						
190	121	Circulatory disorders with AMI and major complication, discharged alive	1.21	1.09	0.95	0.74
	122	Circulatory disorders with AMI without major complication, discharged alive				
194	127	Heart failure and shock	1.50	1.13	0.75	0.49
201	138	Cardiac arrhythmia and conduction disorders with complications or comorbidities	1.08	1.03	0.74	0.47

Note: APR-DRG (all-patient refined diagnosis-related group), DRG (diagnosis-related group), PTCA (percutaneous transluminal coronary angioplasty), AMI (acute myocardial infarction). Relative profitability compares the national average inpatient Medicare profitability of one patient category (APR-DRG) with the national average inpatient profitability of all Medicare discharges. The relative profitability measure is an average for each DRG category, based on cost accounting data. Thus, small differences (for example, 1 percent or 2 percent) in relative profitability among DRGs may not be meaningful. The values shown for the APR-DRG and severity classes associated with any DRG may represent fewer cases than the original DRG if some cases were assigned to other APR-DRGs, or more cases if additional cases were assigned to this APR-DRG from other DRGs. Severity level 1 is least severely ill.

Source: MedPAC analysis of Medicare hospital inpatient claims and cost reports from CMS, fiscal year 2000–2002.

The large differences in relative profitability across severity levels indicate that hospitals may benefit substantially from favorable selection (that is, treating the least severely ill patients) or be financially disadvantaged by adverse selection (treating high severity patients). Thus, hospitals have strong financial incentives to try to control the mix of DRGs and patients they admit.

### Orthopedic conditions commonly treated at orthopedic specialty hospitals

Orthopedic procedure DRGs exhibit rather different patterns from the cardiovascular procedure DRGs (Table 12). Only one of the surgical DRGs in this group (DRG 499) had above-average relative profitability, and most had lower-than-average relative profitability. The two medical DRGs in this table also had lower relative profitability ratios.

**TABLE  
12**

### Estimated relative profitability ratios for selected DRGs and APR-DRG severity classes: orthopedic

APR-DRG	DRG	DRG title	Relative profitability ratio by				
			Entire DRG	APR-DRG severity class			
				1	2	3	4
<b>Surgical DRGs</b>							
301	209	Major joint and limb reattachment procedures of lower extremity	0.91	1.14	1.02	0.81	0.58
302				0.97	0.92	0.74	0.57
300	471	Bilateral or multiple major joint procedures of lower extremity	0.95	1.05	0.98	0.79	0.64
308	210	Hip and femur procedures except major joint age >17 with CC	0.82	0.94	0.91	0.77	0.57
304	497	Spinal fusion except cervical with CC	0.99	1.00	1.05	0.83	0.67
	498	Spinal fusion except cervical without CC	0.91				
310	499	Back and neck procedures except spinal fusion with CC	1.04	1.11	1.08	0.78	0.58
	500	Back and neck procedures except spinal fusion without CC	1.00				
<b>Medical DRGs</b>							
340	236	Fractures of hip and pelvis	0.80	1.22	0.98	0.67	0.44
341				1.15	0.91	0.65	0.40
347	243	Medical back problems	0.85	1.13	0.87	0.60	0.41

Notes: APR-DRG (all-patient refined diagnosis-related group), DRG (diagnosis-related group), CC (complications or comorbidities). Relative profitability compares the national average inpatient Medicare profitability of one patient category (DRG or APR-DRG) with the national average inpatient profitability of all Medicare discharges. The relative profitability measure is an average for each DRG category, based on cost accounting data. Thus, small differences (for example, 1 percent or 2 percent) in relative profitability among DRGs may not be meaningful. The values shown for the APR-DRG and severity classes associated with any DRG may represent fewer cases than the original DRG if some cases were assigned to other APR-DRGs, or more cases if additional cases were assigned to this APR-DRG from other DRGs. Severity level 1 is least severely ill.

Source: MedPAC analysis of Medicare hospital inpatient claims and cost reports from CMS, fiscal year 2000–2002.

When orthopedic cases were grouped by APR–DRG severity classes, however, all but two APR–DRGs had at least one severity class that had higher-than-average relative profitability. The differences in relative profitability across severity classes are substantial, again suggesting that hospitals have strong incentives to manage the mix of patients they admit within DRGs.

### Surgical cases commonly treated at surgical specialty hospitals

Among the types of cases that are common in surgical specialty hospitals, only two of the nine surgical procedure DRGs had higher-than-average relative profitability (Table 13). When cases are grouped by APR–DRG severity classes, however, 13 of the 32 classes had higher-than-average relative profitability (ratios above 1.0). Again, the differences in relative profitability across severity classes are substantial, creating strong incentives for hospitals to manage the mix of patients they admit.

### Patient selection in specialty hospitals

We found that specialty hospitals treat a mix of patients that, on average, should result in higher-than-average relative profitability. Heart hospitals benefit financially from both the mix of DRGs and the severity of patients within them. In contrast, orthopedic and especially surgical hospitals benefit from treating less sick patients and not from the mix of DRGs.

**TABLE  
13**

**Estimated relative profitability for selected DRGs and APR–DRG severity classes: surgical**

APR–DRG	DRG	DRG title	Relative profitability ratio by APR–DRG severity class				
			Entire DRG	1	2	3	4
513	359	Uterine and adnexa procedure for non-malignancy w/out CC	0.95	1.02	1.04	0.69	0.51
	358	Uterine and adnexa procedure for non-malignancy with CC	0.98				
482	337	Transurethral prostatectomy without CC	0.95	1.04	1.08	0.65	0.43
301 302	209	Major joint and limb reattachment procedures of lower extremity	0.91	1.14	1.02	0.81	0.58
				0.97	0.92	0.74	0.57
221	148	Major small and large bowel procedures with CC	1.08	1.36	1.43	1.00	0.73
	149	Major small and large bowel procedures without CC	0.92				
480	335	Major male pelvic procedures without CC	0.99	1.04	1.04	0.72	0.52
227	160	Hernia procedures except inguinal and femoral age >17 without CC	0.90	0.98	1.13	0.75	0.51
404	290	Thyroid procedures	1.03	1.33	1.01	0.52	0.48

Note: APR–DRG (all-patient refined diagnosis-related group), DRG (diagnosis-related group), CC (complications and comorbidities). Relative profitability compares the national average inpatient Medicare profitability of one patient category (DRG or APR–DRG) with the national average inpatient profitability of all Medicare discharges. The relative profitability measure is an average for each DRG category, based on cost accounting data. Thus, small differences (for example, 1 percent or 2 percent) in relative profitability among DRGs may not be meaningful. The values shown for the APR–DRG and severity classes associated with any DRG may represent fewer cases than the original DRG if some cases were assigned to other APR–DRGs, or more cases if additional cases were assigned to this APR–DRG from other DRGs. Severity level 1 is least severely ill.

Source: MedPAC analysis of Medicare hospital inpatient claims and cost reports from CMS, fiscal year 2000–2002.

## Favorable selection in heart specialty hospitals

Heart specialty hospitals treat patients in financially favorable DRGs and, within those, patients who are less sick (and less costly, on average). Assuming that heart specialty hospitals have average costs, their selection of DRGs results in an expected relative profitability 6 percent higher than the average profitability (Table 14). Heart hospitals receive an additional potential benefit (3 percent) from favorable selection among severity classes. As a result, their average expected relative profitability value is 1.09 (the two values are additive).

Reflecting their similar concentration in surgical heart cases, peer heart hospitals also benefit from favorable selection across DRGs, though not as much as specialty heart hospitals. However, peer heart hospitals receive no additional benefit from selection among more or less severe cases within DRGs.

Both specialty heart and peer heart hospitals have a favorable selection of patients compared with competitor hospitals and community hospitals in the specialty heart hospitals' markets, as well as with all IPPS hospitals.

**TABLE  
14**

### Specialty hospitals have high expected relative profitability of inpatient care under Medicare because of the mix of cases they treat

Type of hospital	Number of hospitals	Expected relative profitability due to selection of		
		DRGs	Patient severity	DRGs and patient severity
All nonspecialty IPPS hospitals	4,375	1.00	1.00	1.00
Heart hospitals				
Specialty	12	1.06	1.03	1.09 <sup>a,b</sup>
Peer	36	1.04	0.99	1.03 <sup>b</sup>
Competitor	79	1.01	1.00	1.00
Community	315	0.99	1.01	1.01
Orthopedic hospitals				
Specialty	25	0.95	1.07	1.02 <sup>a,b</sup>
Peer	17	0.95	1.01	0.96
Competitor	305	1.00	1.00	1.00
Community	477	1.00	1.01	1.01
Surgical hospitals				
Specialty	11	0.99	1.16	1.15 <sup>a,b</sup>
Peer	25	1.00	1.06	1.06 <sup>b</sup>
Competitor	237	0.99	1.01	1.01
Community	289	0.99	1.01	1.01

Note: IPPS (inpatient prospective payment system), APR-DRG (all-patient refined diagnosis-related group), DRG (diagnosis-related group). Expected relative profitability measures the financial attractiveness of the hospital's mix of Medicare cases, given the national average relative profitability of each patient category (DRG or APR-DRG severity class). The relative profitability measure is an average for each DRG category, based on cost accounting data. Thus, small differences (for example, 1 or 2 percent) in relative profitability may not be meaningful. Specialty hospitals are specialized and physician owned. Peer hospitals are specialized but are not physician owned. Competitor hospitals are in the same markets as specialty hospitals and provide some similar services. Community hospitals are all hospitals in the same market as specialty hospitals.

<sup>a</sup> Significantly different from peer hospitals using a Tukey mean separation test and a  $p < .05$  criterion.

<sup>b</sup> Significantly different from nonpeer community hospitals using a Tukey mean separation test and a  $p < .05$  criterion.

Source: MedPAC analysis of Medicare hospital inpatient claims and cost reports from CMS, fiscal year 2000-2002.

In interviews during our site visits, community hospital representatives claimed that this favorable selection of patients was a result of the financial motivations of physician ownership. Specialty hospital representatives argued that the favorable selection occurred for other reasons, including:

- The services on which the specialty hospital has chosen to focus.
- Physician decision making about where to admit medically complex cases, such as patients with chronic diabetes, congestive heart failure, renal failure, or pulmonary or gastrointestinal complications. Some physicians said they admitted patients with multiple comorbidities to community hospitals so that these patients could be treated by consulting specialists.
- Patient preferences—when medically complex patients are given a choice, they often prefer the community hospitals where they receive their other medical care.

### **Favorable patient selection in orthopedic specialty hospitals**

In contrast to the heart hospitals, neither orthopedic specialty hospitals nor their peers seem to have a favorable DRG selection. They both have a mix of DRGs with expected relative payment-to-cost ratios of 0.95 (Table 14). However, by treating a high proportion of low-severity patients within their mix of DRGs, specialty orthopedic hospitals show an overall favorable selection (1.02). Peer orthopedic hospitals experience only a small effect from favorable selection across severity classes, leaving them slightly advantaged by their severity mix but with less-than-average expected relative profitability for Medicare patients.

### **Favorable patient selection in surgical specialty hospitals**

Like orthopedic hospitals, surgical specialty hospitals and their peers do not appear to have a favorable mix of DRGs, but show a favorable selection of patients overall (1.15) because they treat relatively low-severity patients within the DRGs (Table 14). Note, however, that surgical hospitals are a diverse set of often small facilities that treat few Medicare patients in a wide range of DRGs. The 11 surgical specialty hospitals that we identified treated only 1,117 Medicare patients in fiscal year 2002. Due to the small numbers of cases, these results should be viewed with greater caution than results for heart and orthopedic hospitals. Nevertheless, these results are consistent with frank statements attesting to favorable selection made by some surgical hospital physicians whom we talked with on our site visits.

Peer surgical hospitals also experience favorable selection across severity classes and favorable selection overall. Both specialty and peer surgical hospitals have expected relative profitability that is significantly higher than that of community hospitals.

On our site visits, some physicians practicing at orthopedic and surgical specialty hospitals spoke openly about patient selection, though sometimes the selection was described in terms of what services were available at the specialty hospital. We were told that patients with comorbidities (for example, patients with chronic obstructive pulmonary disease or a history of heart problems) or who might need more sophisticated or backup services were admitted to the community hospital. Often these decisions were expressed as practicing responsible medicine. Some specialty hospitals' admission policies are clear about patients who will not be admitted; these include, for example, those who require critical care nursing, invasive monitoring, or mechanical ventilation.

## **Cases transferred in and out of heart hospitals**

Many hospitals transfer a few cases to other acute care hospitals. Sometimes patients are transferred because the hospital lacks certain equipment or staff expertise. Such transfers are likely to improve the quality of care that the patients might otherwise have received. Other times, hospitals respond to the incentives of the IPPS to lower their own costs by discharging patients to other hospitals or post-acute settings. During our site visits, we heard a range of opinions about transfers. Specialty hospitals told us that they transferred out cases for whom they lacked services that are needed for appropriate treatment. Community hospitals told us they thought that some of the transfers were financially motivated.

We found that specialty heart hospitals transferred out a higher share of their patients compared with peer heart hospitals. The difference in the percentage of cases transferred out was larger for nonheart cases. The numbers of cases transferred were small, however. The typical specialty heart hospital transferred out 27 cardiac cases and 18 noncardiac cases out of about 2,000 cases per year. On our site visits, we were told that patients who were transferred out included those who required neurosurgery, transplants, gastrointestinal surgery, or the use of equipment that the specialty hospital did not have.

But specialty heart hospitals are also a transfer destination for patients from other hospitals. More than one-quarter of their heart patients are transferred in from other hospitals, compared with less than 5 percent of cases for their competitors and under 20 percent for peer hospitals. At the typical heart hospital, this transfer-in rate meant that more than 500 cases a year came from other acute care hospitals (often small rural hospitals). Though the shares of noncardiac cases transferred in were considerably smaller for each hospital group, they were still substantial.

## **Policy options and recommendations**

The Congress asked the Commission to recommend changes to the IPPS to better reflect the cost of delivering care. As shown in the previous section, changes are needed to improve the accuracy of the payment system and thus reduce opportunities for hospitals to benefit from selection. We present several policy options and recommendations to improve the IPPS.

The Commission recognizes that physician-owned specialty hospitals are a relatively new phenomenon, and we do not want to unnecessarily inhibit the development of organizational arrangements that may bring innovations to care delivery. However, our early evidence, limited as it is, does not show lower costs in specialty hospitals and does show that specialty hospitals are benefiting from selection opportunities among and within DRGs that are rewarded by the current IPPS. We await the Secretary's report for evidence on whether they improve quality. Recognizing those uncertainties and the ongoing concerns about physician conflict of interest stemming from self-referral, we recommend extending the current moratorium on new physician-owned specialty hospitals, without going so far as to prohibit their development altogether at this time. We also consider what other measures might better align physician and hospital financial incentives while limiting the undesirable incentives related to physician investment in hospitals.

### **Options to revise the IPPS**

Earlier, we presented information showing that Medicare's IPPS payment rates result in substantial differences in national average relative profitability across and within DRGs.

The differences arise, for the most part, from three sources:

- **The DRG definitions.** The DRG definitions fail to adequately isolate differences in severity of illness associated with substantial differences in the cost of hospital inpatient care.
- **The DRG relative weights.** The relative weights appear to over- or understate the expected relative costliness of treatment for typical cases in the DRGs due to differences in charge-setting practices across and within hospitals and differences in the level of costs across hospitals.
- **The outlier policy.** The extraordinary charges associated with outlier cases appear to inflate the relative weights for DRGs with a disproportionate share of outliers.

These differences in relative profitability give hospitals financial incentives to specialize in treating patients in relatively profitable DRGs and to prefer low-cost patients within DRGs. In this section, we present policy options designed to mitigate these financial incentives.

To address the limitations described above, we examined four potential refinements to Medicare’s policies and methods.

- 1) Using hospital-specific relative values to calculate relative weights. In contrast to the current relative weights, which are based on the national average charges in each DRG, weights based on the national average of hospital-specific relative values would not be affected by differences among hospitals in the overall level of charges or costs.<sup>27</sup>
- 2) Using refined DRGs. Refined DRGs would account more completely for differences in severity of illness (and associated costs) among patients. To illustrate the potential gains that might be obtained from refining the DRGs, we used the severity class definitions from the APR–DRG patient classification system.
- 3) Substituting weights based on the estimated costs of furnishing care for weights based on hospitals’ billed charges. Weights based on estimated costs would have fewer distortions that result from hospitals using different markups for services furnished in different hospital departments.
- 4) Accounting for differences in frequency of outliers across patient categories. Weights that are adjusted for outlier prevalence would more accurately reflect the costs of the typical cases in each DRG or refined DRG. (Other aspects of current outlier policy would remain unchanged. For example, the inclusion of all payments including DSH and IME when calculating the loss and the fixed loss threshold would remain—as would any anomalies they present.)<sup>28</sup>

We focused our assessment of the policy options on two outcomes: their effect on the accuracy of payments across and within patient categories and their effect on IPPS payments to hospitals. To evaluate payment accuracy, we examined changes in the national average relative profitability of DRGs and APR–DRG severity classes. To the extent that the relative profitability ratio for a DRG or a severity class differs from 1.00, it represents a potential opportunity for hospitals to benefit (or be disadvantaged) by selection across and within DRGs. As payments become more accurate, the spread in average relative profitability should decrease and cluster around 1.00—that is, patient categories should be neither relatively more nor less profitable than the average. To measure the impact of the policy options on hospitals’ IPPS payments, we estimated the percentage change in payments for each option relative to the payments under current policy.



We look at the four potential policy changes described above incrementally. By adding the changes one at a time, we can illustrate the marginal effect of each change. The four options below each add one change to the previous option, starting with the base of the current payment system. Each option thus builds upon the previous option so that the fourth option shows the combined effects of adding all four changes to the current policy:

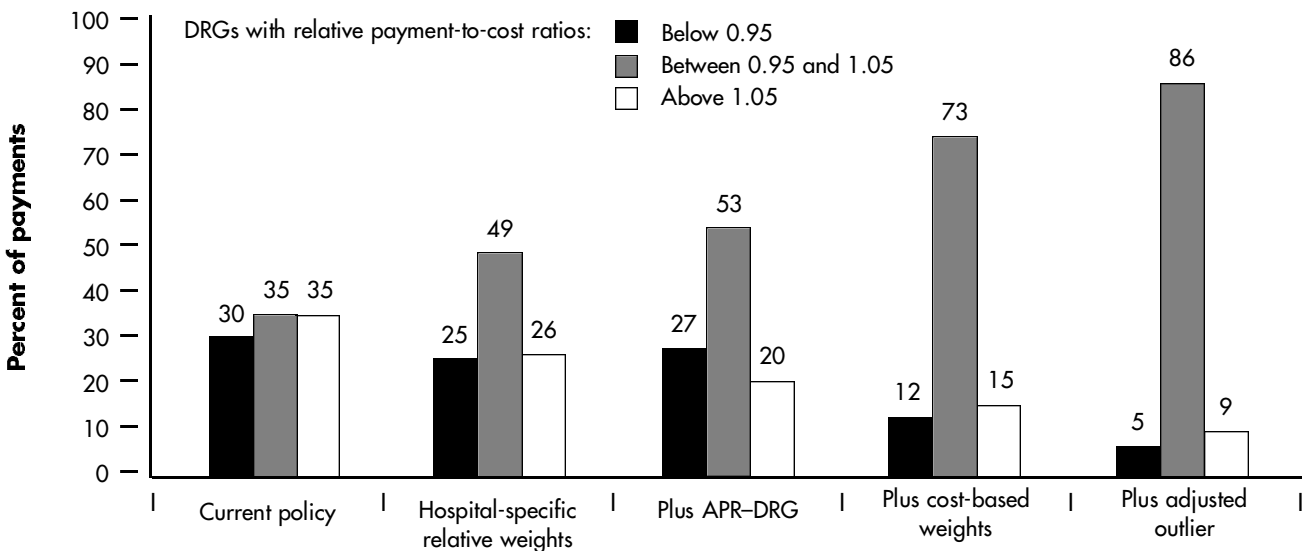
- Option 1. Use hospital-specific relative value (HRV) weights instead of conventional weights based on standardized charges.
- Option 2. Use APR-DRGs instead of DRGs, and HRV weights.
- Option 3. Use costs instead of charges, APR-DRGs, and HRV weights.
- Option 4. Change the outlier policy to account for outlier prevalence across APR-DRGs, use costs, APR-DRGs, and HRV weights.

**Policy changes would make payments more accurate**

The four policy changes taken together have the best potential to make payments more accurate, thereby limiting the advantage a hospital could gain by selecting DRGs and patients. For instance, the relative profitability ratio in DRG 105 would drop from 1.09 to 1.04 if we were to use relative weights that were based on the national average of hospital-specific relative values; it would fall further if we were to adopt more refined patient-severity categories. If we also adopted cost-based relative weights, the ratio would be close to 1.00. The same convergence of the relative profitability ratios toward 1.00 can be seen for other DRGs (see Appendix D for estimates of relative profitability under each policy option for selected DRGs).

Together, the policy changes substantially reduce the share of IPPS payments that would fall in DRGs that have profitability ratios that are more than 5 percent above or below the average (Figure 4). As the

**FIGURE 4** Improvement in payment accuracy from policy changes



Note: DRG (diagnosis-related group), APR-DRG (all-patient refined diagnosis-related group).  
 Source: MedPAC analysis of Medicare hospital inpatient claims and cost reports from CMS, fiscal year 2000-2002.

figure shows, each policy option improves payment accuracy, bringing relative profitability ratios for additional DRGs closer to 1.00. Under the fourth option—adopting all four policy changes—the share of IPPS payments that would fall within 5 percent of the average DRG profitability would be 86 percent, compared with 35 percent under current policies.

### How policy changes affect hospital groups’ expected payment-to-cost ratios

As the policy changes improve payment accuracy, they reduce differences in relative profitability across and within DRGs. As a result, these policy changes would reduce opportunities for hospitals to benefit from (or be harmed by) differences in patient selection. Specialty heart hospitals, for example, have a favorable selection of Medicare patients, which in our policy simulation results in an expected relative profitability ratio of 1.13 (Table 15).<sup>29</sup> Moving to relative weights based on hospital-specific relative values (but still charge based) and APR–DRGs would reduce the potential advantage to 1.04. Adopting cost-based relative weights would bring the ratio down to 0.99. In other words, the favorable selection now observed at specialty heart hospitals would be substantially reduced. Similarly, the potential advantages now enjoyed by specialty orthopedic and surgical hospitals would be reduced under these policy changes.

However, opportunities for selection never fully disappear for two reasons. First, our profitability measure is an average for each severity-adjusted DRG category, based on Medicare cost report data that may differ from a hospital’s own cost accounting data. Second, physicians always know more than CMS about individual patients’ expected costs. At the group level, most other hospitals do not benefit from favorable selection now, and the groups would neither gain nor lose under these policy changes.

However, taken together, the policy changes would change payments to some individual specialty hospitals by a significant amount. If all of the policy changes were implemented, almost 90 percent of physician-owned heart hospitals would see their Medicare IPPS payments fall by more than 5 percent. About 76 percent of physician-owned orthopedic hospitals would see their payments decline by 5 percent or more (Table 16).

**TABLE 15** Hospitals’ expected relative profitability ratios approach one when all policy options are taken together

Hospital type	Current policy	Hospital-specific relative weights	Plus APR-DRG	Plus cost-based weights	Plus adjusted outlier
Specialty					
Heart	1.13	1.08	1.04	0.99	0.99
Orthopedic	1.06	1.07	0.98	0.95	0.99
Surgical	1.14	1.16	0.99	0.96	1.00
All other IPPS					
Urban	1.01	1.00	1.01	1.00	1.00
Rural	0.99	1.01	0.98	0.99	1.01
High IME/DSH	1.02	1.00	1.02	1.01	1.00

Note: APR–DRG (all-patient refined diagnosis-related group), IPPS (inpatient prospective payment system), IME/DSH (indirect medical education/disproportionate share). IME payments go to teaching hospitals, and DSH payments go to hospitals that treat a disproportionate share of Medicaid and poor Medicare patients. The relative profitability measure is an average for each DRG category, based on cost accounting data. Thus, small differences (for example, 1 or 2 percent) in relative profitability may not be meaningful. Payments include all IPPS payments.

Source: MedPAC analysis of Medicare hospital inpatient claims and cost reports from CMS, fiscal year 2000–2002.

**TABLE  
16**

**Many hospitals would see large changes in Medicare payments if all policy changes were taken together**

**Share of hospitals and corresponding change in Medicare payments**

Hospital type	Number of hospitals	< -5%	-5% to -1%	-1% to +1%	+1% to 5%	>+5%
Specialty						
Heart	8	87%	13%	0%	0%	0%
Orthopedic	17	76	24	0	0	0
Surgical	2	–	–	–	–	–
All other IPPS						
Urban	2,485	7	22	16	33	22
Rural	1,631	8	25	17	33	16
High IME/DSH	554	8	28	14	25	24

Note: IPPS (inpatient prospective payment system), IME/DSH (indirect medical education/disproportionate share). IME payments go to teaching hospitals, and DSH payments go to hospitals that treat a disproportionate share of Medicaid and poor Medicare patients. Only hospitals with both usable claims and cost report data are included. Only two surgical hospitals had complete data available for analysis, and because of the small number of claims represented, a group distribution is not reported. Totals may not sum to 100% due to rounding.

Source: MedPAC analysis of Medicare claims and hospital cost reports.

Some community hospitals also could see large changes in their payments. For example, 7 percent of urban community hospitals would see their payments decline by more than 5 percent, while 22 percent would have increases greater than 5 percent. In general, these estimates suggest that some kind of transition policy would be helpful in cushioning the fairly large changes that some hospitals could experience if all four policy changes were adopted.

**Payment recommendations**

In view of our findings, we recommend that the Secretary of Health and Human Services (HHS) and the Congress adopt specific refinements in the DRG patient classification system and in the methods and data used to set the DRG relative weights.

**RECOMMENDATION 1**

**The Secretary should improve payment accuracy in the hospital inpatient prospective payment system by:**

- refining the current DRGs to more fully capture differences in severity of illness among patients,
- basing the DRG relative weights on the estimated cost of providing care rather than on charges, and
- basing the weights on the national average of hospitals’ relative values in each DRG.

## **Rationale**

Our analyses of potential refinements to the DRG definitions (as illustrated by the APR–DRGs) and to the data and methods used to calculate the DRG relative weights demonstrate that these policies would yield substantial improvements in payment accuracy. These improvements would reduce the large differences in relative profitability across and within DRGs that now inappropriately encourage hospitals to specialize in treating patients in profitable DRGs and to select low-cost patients within DRGs.

## **Implications**

### **Spending**

This recommendation would not affect federal program spending relative to current law. (However, see discussion of coding creep, page 42.)

### **Beneficiary**

This recommendation is not expected to change beneficiary access to care.

### **Provider**

Payments will increase for some providers and decrease for others depending on their selection of DRGs and patients.

## **RECOMMENDATION 2**

**The Congress should amend the law to give the Secretary authority to adjust the DRG relative weights to account for differences in the prevalence of high-cost outlier cases.**

## **Rationale**

The variation in the prevalence of high-cost outlier cases contributes to current disparities in relative profitability across and within DRGs. These disparities could give hospitals an incentive to serve low-severity patients in DRGs that have a high prevalence of outliers.

Once the Congress provides the Secretary with statutory authority to adjust the weights, CMS should adopt this change to increase payment accuracy. Typical (that is, nonoutlier) cases in DRGs that have a disproportionate prevalence of outlier cases would no longer benefit from relative weights that are overstated. In addition, cases in DRGs that have a low prevalence of outliers would be paid more appropriately because their payments would rise with the removal of the current national uniform offset.

## **Implications**

### **Spending**

This recommendation would not affect federal program spending relative to current law.

### **Beneficiary**

This recommendation is not expected to change beneficiary access to care.

### **Provider**

Payments will increase for some providers and decrease for others depending on their mix of DRGs and nonoutlier and outlier cases.

## RECOMMENDATION 3

### **The Congress and the Secretary should implement the case-mix measurement and outlier policies over a transitional period.**

#### **Rationale**

Our analyses show that the recommended refinements to Medicare's case-mix measurement and outlier financing policies would substantially change IPPS payments for many hospitals. Many hospitals facing payment changes under our recommended policies could accommodate those changes in a relatively short period. Traditional phase-in mechanisms likely would prevent substantial or lasting distress to relatively efficient providers.

#### **Implications**

##### **Spending**

This recommendation would not affect federal program spending relative to current law.

##### **Beneficiary**

This recommendation is not expected to change beneficiary access to care.

##### **Provider**

Providers with large anticipated changes in payments would experience smaller changes than otherwise would occur during the transition period.

#### **Implementation issues**

Making these payment system improvements and designing the transition will not be simple tasks. We recognize that CMS has many priorities and limited resources and that the refinements will raise some difficult issues. These include the potentially large number of payment groups created, potential increases in payments from improvements in coding, and the burden on CMS and time lag associated with using costs rather than charges. As we discuss these issues below, we outline approaches that could make implementation less onerous.

##### **Implementation issues regarding a refined DRG system**

The larger number of DRGs might mean that CMS would be faced with establishing weights in many categories that have few cases and thus potentially creating unstable estimates. To avoid creating refined DRGs with unstable relative weights, the Secretary should be selective in adopting fine clinical distinctions similar to those reflected in the APR-DRGs. Refining the DRGs will require carefully weighing the benefits of more accurate clinical and economic distinctions against the potential for instability in relative weights based on small numbers of cases. Many of these judgments could be relatively straightforward. The APR-DRGs were designed to classify patients of all ages and include many categories that generally have few or no patients in the Medicare population. In addition, estimated differences in average costs among severity classes may be small enough in many instances to suggest that these distinctions are not needed.

Another potential problem is that greater reliance on secondary diagnoses may lead to substantial changes in hospital coding and reporting behavior. In the past, refinements in DRG definitions have sometimes led to substantial unwarranted increases in payments to hospitals, reflecting more complete reporting of patients' diagnoses and procedures. This phenomenon is often referred to as "coding creep." Adopting our recommended refinements to the DRG definitions and weights would substantially strengthen providers' incentives to accurately report patients' comorbidities and complications. Although improvements in providers' reporting practices are otherwise desirable, at the margin they are likely to shift the distribution of payments across hospitals. This redistribution is appropriate because assigning cases more accurately to DRGs better reflects the incidence of hospitals' costs. But shifts in reporting that alter the assignment of cases among DRGs do not affect the total cost of treating Medicare patients. Therefore, the Secretary should project the likely effect of reporting improvements on total payments and make an offsetting adjustment to the national average base payment amounts.

We recognize that projecting the appropriate adjustment to offset reporting changes in response to DRG refinements is a difficult task. One way to assess the amount of actual case-mix change (as opposed to coding changes) would be for CMS to use the information gathered from its quality assurance contractors as they review and reabstract claims. These data would indicate the extent to which hospitals' reporting actually changed; the data could then be used to make offsetting adjustments and minimize any forecast errors.

#### **Implementation issues regarding cost-based weights**

Using claim-level costs instead of billed charges raises several issues. The process of estimating case-level costs is difficult and expensive. Additionally, CMS gets access to cost report data more slowly than claims, thus lengthening the lag in the data for updating the relative weights. One way to address these problems would be to continue annually calculating weights based on the most recent available charge data, but adjust those weights based on the relationship between cost-based weights and charge-based weights. For example, one approach would be to calculate the ratio of the cost weight to the charge weight for each DRG using data for a given year. Then the same ratio would be used to adjust the charge weights until the next major revision of the cost estimate.

#### **Recommendations on revising laws governing financial relationships between physicians and hospitals**

We have explored whether to modify the laws that govern financial relationships between physicians and hospitals. Although ownership of hospitals gives physicians control over hospital operations, it also creates financial incentives that may improperly influence physicians' professional judgment and create unfair competition among hospitals. Hospitals with physician-investors have a competitive advantage over other hospitals because physicians influence where patients receive care. Competition among hospitals should be based on quality and cost of care, rather than on the financial gains that physicians who refer patients may receive.

The options we considered include financial disclosure requirements for physician-investors, curtailing development of physician-owned specialty hospitals, and allowing gainsharing between physicians and hospitals.

### **Require disclosure of financial interests**

One option is to require that physicians who invest in a hospital inform their patients admitted to the hospital that they have an ownership interest. Several states (such as Arizona, California, Kansas, New Hampshire, Utah, and Washington) currently impose such rules. The American Medical Association recommends that physician-owners disclose their investment interest to their patients, provide a list of alternative facilities, inform patients that they may obtain services elsewhere, and assure them that they will not be treated differently if they choose another facility (AMA 2004).

A disclosure of the physician's financial stake in the hospital might encourage patients to confirm that the physician is recommending treatment based on clinical, rather than financial, considerations and that the physician-owned hospital is the best facility for their treatment. However, many patients might not realize that their physicians' ownership interests could affect their referral decisions. Even if they are aware of this, many patients trust their physician to recommend care that is in the patient's best interest. They may be unwilling to question their physician's professional judgment, especially when they are sick. Patients may also lack other sources of information to verify that the treatment recommended by their physician is appropriate and the physician-owned hospital is the best facility for their condition.

### **Curtail development of physician-owned specialty hospitals**

The current IPPS creates unfair competitive advantages for physician-owned specialty hospitals by rewarding the selection of certain cases and patients. Moreover, our early evidence does not show lower costs in specialty hospitals for Medicare patients. Evidence is not yet in on whether specialty hospitals provide higher quality patient care. (The Secretary's report on specialty hospitals, including their quality of care, is due out in March 2005.) If the IPPS changes discussed above are made, competitive advantage based on selection should be substantially reduced. Nonetheless, the Commission has some remaining concerns about whether there is an inherent conflict of interest in physician-ownership.

The Commission considered one option to deal with these concerns: repealing the "whole hospital" exception in Stark II. This would effectively end the development of physician-owned hospitals serving Medicaid and Medicare patients. However, specialty hospitals may be an important competitive force that promotes innovation and may be an appropriate response to physician frustration with community hospitals' lack of responsiveness and physicians' desire for control. Therefore, the Commission does not want to preclude their development before gaining a fuller understanding of their quality and efficiency. As more information and further data on service use and community impact become available, the Commission may reconsider the advisability of repealing or otherwise modifying the whole hospital exception. One modification that could be considered in the future would be to create provisions to limit the types of hospitals physicians might own (for example, requiring that all physician-owned hospitals have emergency departments or serve a minimum share of Medicaid patients).

At this point, the Commission recommends that the Congress should extend the MMA's moratorium prohibiting physicians who invest in new specialty hospitals from referring Medicare and Medicaid patients to those hospitals until January 1, 2007. This would provide more time to gather information on specialty hospitals' efficiency and quality, and their effects on community hospitals and use of services. It would also give the Congress and the Secretary time to consider our recommended changes to the IPPS. (If the Secretary completes the DRG revisions called for and the Congress provides the Secretary

with the additional authorities we recommend prior to that date, the Congress could consider ending the moratorium at that time. However, the concerns over self-referral and the impacts of specialty hospitals would still remain.)

## RECOMMENDATION 4

### **The Congress should extend the current moratorium on specialty hospitals until January 1, 2007.**

#### **Rationale**

Medicare's IPPS, as currently structured, provides incentives to hospitals to select more profitable cases and patients, and evidence shows they are benefiting from favorable selection. Because physician-owned hospitals are uniquely situated to take advantage of these incentives, they have an unfair competitive advantage over other hospitals. Physicians also have an incentive to increase the use of high-profit services at hospitals in which they invest.

#### **Implications**

##### **Spending**

This recommendation would not affect federal program spending relative to current law.

##### **Beneficiary and provider**

This recommendation is not expected to change beneficiary access to care.

#### **Allow gainsharing arrangements between physicians and hospitals**

Gainsharing arrangements offer an opportunity to better align physician and hospital financial incentives while limiting the undesirable incentives related to physician investment in hospitals. In a gainsharing arrangement, hospitals and physicians agree to share savings from re-engineering clinical care in the hospital. Such efforts could include single sourcing of medical devices, more efficient scheduling of operating rooms, and compliance with clinical protocols that improve efficiency and quality. If quality bonuses were available, they could also be shared. Gainsharing has the potential to encourage physicians and hospitals to cooperate in developing more efficient ways to deliver care, thus countering the sometimes conflicting payment incentives caused by separate payment systems for physicians and hospitals under fee-for-service Medicare.

The Commission believes that gainsharing arrangements have the potential to improve patient care and reduce hospital costs as long as safeguards are in place to minimize the undesirable incentives. For example, physicians who participate in gainsharing should not be rewarded for increasing referrals or stinting on care or reducing quality.

Efforts to promote gainsharing arrangements in the late 1990s were largely halted in response to a special advisory bulletin issued by the OIG in 1999. The OIG advised that gainsharing arrangements were prohibited by a civil monetary penalty (CMP) provision in the Social Security Act that prohibits hospitals from offering physicians financial incentives to reduce or limit services to Medicare beneficiaries (OIG 1999b). However, the statute permits the Secretary to regulate physician incentive arrangements with



managed care plans that enroll Medicare beneficiaries (see Appendix B). In addition to creating incentives for physicians to withhold or diminish care to patients, the OIG said that these arrangements could induce physicians to refer patients to the hospital with which they have the most lucrative arrangement. Moreover, these arrangements might be used to disguise kickbacks.

The OIG noted in its ruling that well-designed arrangements could result in better-quality care at lower costs, by, for example, encouraging physicians to substitute lower-cost (but equally effective) supplies and devices and reduce the use of unnecessary ancillary services and inpatient days. Nevertheless, the OIG concluded that it lacked the statutory authority to require safeguards to ensure that cost-saving measures do not reduce quality.

In a later advisory opinion, the OIG approved a narrow gainsharing arrangement because the plan had several features that protected the quality of care and minimized incentives that might affect physician referral patterns (see text box below).

### **Example of gainsharing agreement**

#### **Key features:**

- The plan clearly identified specific actions that would produce savings, such as curbing the inappropriate use of supplies. For example, the agreement encouraged surgeons to forgo the use of a preoperative medication unless indicated by clinical standards.
- The plan was transparent and disclosed to patients, which promoted physician accountability and deterred abusive behavior.
- Periodic reviews of quality of care by an independent agent would take place.
- The agreement set thresholds of appropriate use of supplies based on clinical standards and historic patterns. Surgeons could not receive a share of savings if use fell below this baseline.
- The plan was of limited scope and duration (only one year).

The advisory opinion also found that several of the plan's features made it unlikely to be used to financially reward physicians for referring patients to the hospital, a potential violation of the anti-kickback statute:

- Participation in the arrangement was limited to surgeons already on the medical staff, thus minimizing its potential to attract new surgeons.
- The potential savings would be capped based on the number of prior year admissions by the surgeons; thus, little incentive would exist to increase the number of admissions.
- To minimize the incentive to steer less costly patients to the hospital, the severity, age, and insurance coverage of patients admitted by physicians to the hospital would be monitored.

Due to the potential for gainsharing arrangements to encourage physician and hospital cooperation to lower costs and improve care, the Congress should provide the Secretary with the authority to allow and regulate these arrangements. The Secretary should develop rules that allow gainsharing arrangements as long as safeguards exist to ensure that cost-saving measures do not reduce quality or inappropriately influence physician referrals.

For example, drawing on the OIG-approved plan, the Secretary could require that gainsharing agreements:

- identify specific actions that would produce savings, such as limiting the inappropriate use of supplies;
- are transparent and disclosed to patients;
- include periodic reviews of quality of care by an independent organization;
- limit the amount of time during which physicians can share cost savings, to prevent hospitals from using these agreements as a mechanism to induce physician referrals;
- avoid rewarding physicians for increasing referrals to the hospital, such as capping potential savings based on the number of prior year admissions; and
- monitor changes in the severity, age, and insurance coverage of patients affected by the arrangement.

In developing the rules, the Secretary should consult with physicians, hospitals, and beneficiaries. In addition, the Secretary may want to develop model arrangements, or safe harbors, that incorporate several of the features noted earlier. Agreements that meet the safe harbor standards would be protected from prosecution under the CMP provision and the anti-kickback statute.

Given the variety and complexity of potential gainsharing arrangements, we recognize that it will be difficult to craft rules that prevent the use of gainsharing to reward physician referrals or stinting on care for patients. At the same time, improving or achieving quality measures could be part of the gainsharing arrangement. Such arrangements might be encouraged if hospitals and physicians start getting paid for quality performance, as recommended in our March 2005 *Report to the Congress* (MedPAC 2005).

Although we do not estimate that this recommendation will reduce Medicare spending, it will allow CMS to resume demonstration programs that involve gainsharing arrangements in which Medicare pays hospitals and physicians a global payment for Part A and Part B services. In 2004, a federal district court stopped CMS from implementing an eight-hospital demonstration of gainsharing based on the CMP provision (*Robert Wood Johnson University Hospital v. Thompson 2004*). Such programs could eventually lead to savings for Medicare.

## RECOMMENDATION 5

**The Congress should grant the Secretary the authority to allow gainsharing arrangements between physicians and hospitals and to regulate those arrangements to protect the quality of care and minimize financial incentives that could affect physician referrals.**

### **Rationale**

Properly structured, gainsharing arrangements have the potential to encourage physician and hospital cooperation to lower costs and improve care, but there should be safeguards to ensure that cost-saving measures do not reduce quality or inappropriately influence physician referrals. These arrangements could serve as an alternative to physician-owned specialty hospitals.

### **Implications**

#### **Spending**

This recommendation would not affect federal program spending relative to current law.

#### **Beneficiary and provider**

This recommendation is not expected to change beneficiary access to care.

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## Endnotes

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- 1 Throughout this report, the term “community hospitals” will refer to full-service community hospitals.
- 2 New specialty hospitals are those not in operation or under development as of November 18, 2003.
- 3 See Appendix A for the language of section 507 of the Medicare Prescription Drug, Improvement, and Modernization Act of 2003, which contains the moratorium and our mandate.
- 4 In its guidance on exemptions from the moratorium, published on March 19, 2004, CMS stated that it was not designating any other specialty categories.
- 5 Three of the surgical hospitals are women’s hospitals; we include them because they meet the surgery prevalence criteria, not because we are including women’s hospitals as a specialty group.
- 6 According to GAO, the number of specialty hospitals more than tripled from 29 in 1990 to 92 in 2003. Using similar criteria, GAO identified 17 cardiac, 36 orthopedic, 22 surgical, and 17 women’s hospitals that specialize in certain types of care. Their higher counts are due to their inclusion of hospitals that are not physician owned and women’s hospitals (GAO 2003b).
- 7 A *major* teaching hospital is defined as having a resident-to-bed ratio of 0.25 or higher. *Other* teaching hospitals have a ratio between 0 and 0.25.
- 8 Hospitals qualify for additional Medicare payments if they treat a disproportionate share of Medicaid patients and Medicare patients on supplemental security income.
- 9 Small and mid-sized urban areas are defined as metropolitan areas with populations under 1 million; large urban areas are metropolitan statistical areas (MSA)s with populations of at least 1 million.
- 10 For example, the GAO found that physicians who were investors in diagnostic imaging centers referred their patients more frequently for tests than nonowners (GAO 1994).
- 11 Theoretically, hospital ownership of physician practices might also create unfair competition when hospitals compel their employed physicians to refer patients to the hospital-employer. The current rules allow hospitals to require that employed physicians refer patients to the hospital employer, as long as such referrals do not conflict with the patient’s preferences and insurance coverage and the physician’s professional judgment. In addition, the physician’s compensation must be fair market value for services performed and must not take into account the volume or value of referrals to the hospital (see Appendix B).
- 12 In 1999, the OIG established “safe harbors” that protect physician investments in ASCs from prosecution under the anti-kickback statute (OIG 1999a). The safe harbors are limited to physicians who routinely use the facilities and to facilities that do not provide ancillary services other than those included in the bundled ASC facility fee.
- 13 We defined markets using the Dartmouth hospital referral regions (HRRs), which are based on the referral patterns for coronary artery bypass grafts (Wennberg et al. 1999).

- 14 Competitors of heart hospitals treated at least 10 Medicare cases in the common heart-procedure DRGs. Competitors of orthopedic hospitals treated at least five cases in the surgical DRGs within major diagnostic category (MDC) 8 (Diseases and disorders of the musculoskeletal system and connective tissue). Competitors of surgical hospitals treated at least five surgical cases.
- 15 They must meet all the criteria for specialty hospitals discussed earlier, except for physician ownership. Because specialty hospitals have a high share of surgery patients, we required that peer heart hospitals perform surgery as well. Peer heart hospitals had to treat at least 10 Medicare discharges in the DRGs for the heart procedures commonly performed at specialty hospitals (DRGs 106, 107, 109, 516, 517, 518, 526, and 527). Likewise, orthopedic specialty hospitals had to perform at least 5 surgeries within MDC 8.
- 16 This analysis focused on inpatient care and did not evaluate the cost of outpatient services. It is possible that surgical hospitals perform better than average financially on outpatient cases.
- 17 Table 6 does not include surgical hospitals. We classified hospitals as surgical hospitals if 45 percent of the hospital's Medicare discharges were surgical patients. Some of these surgical hospitals are women's hospitals with high rates of Medicaid patients. Other surgical hospitals are general surgery hospitals with almost no Medicaid patients. Due to the variance of Medicaid rates within this group, presenting a summary Medicaid share for the group is not meaningful.
- 18 The GAO examined specialty hospitals' of Medicaid discharges in six states. Their definition of specialty hospitals included specialty hospitals that were not physician owned. The GAO found that Medicaid patients constituted 3 percent of the cardiac patients treated at heart hospitals compared with 6 percent of the cardiac patients at area general hospitals (GAO 2003a).
- 19 We categorize admissions as surgical or medical based on the DRG system. Hence, we define angioplasties as a surgical procedure. The profit margin on angioplasties may be close to that of CABG surgery, but the dollar value of marginal profits is expected to be higher for CABG surgery.
- 20 On our site visits, financial officers of specialty hospitals stated that the cost of a defibrillator can equal or exceed the payment that is received from Medicare. Note that CMS responded to complaints that hospitals were losing money on defibrillator implantation and substantially increased Medicare payment starting in October 2003, when it created two new defibrillator DRGs. However, industry representatives claim that these services are still unprofitable.
- 21 We found that that community hospitals' Medicare inpatient revenue per bed grew 2.4 percent slower from 1997 to 2002 in markets with physician-owned heart hospitals. This difference is consistent with the finding that heart hospitals are capturing market share from community hospitals.
- 22 Of the 25 specialty hospitals examined, 21 had a relatively favorable selection of cases—fewer in high-severity classes and more in low-severity classes—compared with area general community hospitals (GAO 2003b).
- 23 Charges are standardized to remove the effects of differences in local prices for inputs (input price adjustment), and the extent to which hospitals operate resident training programs (the IME adjustment) or serve a disproportionate share of low-income patients (the DSH adjustment).
- 24 A small number of claims are excluded because they are *statistical* outliers. But these exclusion thresholds are very conservative and affect only a few claims.

- 25 The APR–DRGs are one commercially available set of refined DRG definitions that make much greater use of secondary diagnoses to group patients (3M 1998). Version 15, used in this study, sorts patients into 352 categories (APR–DRGs) and then splits each APR–DRG into 4 severity levels for a total of 1,408 subcategories. For each APR–DRG, class 1 patients tend to be relatively healthier and uncomplicated, whereas class 4 patients usually have multiple coexisting conditions, major complications, or both.
- 26 We selected surgical DRGs that are commonly found in heart specialty hospitals. We also included a few medical DRGs that are less commonly seen in specialty hospitals for comparison.
- 27 CMS currently uses this method to calculate relative weights for DRGs in its prospective payment system for long-term care hospitals.
- 28 So that the relative weights are not distorted by the costs of outlier cases, the Secretary could apply DRG-specific offsets that would reduce the relative weight by the proportion that expected outlier payments represent of DRG payments plus outlier payments. These offsets would be set to expend the current outlier pool, which is equal to 5.1 percent of the sum of operating DRG payments and outlier payments. At the same time, the 5.1 percent national uniform offset, currently applied to the base payment amounts to finance outlier payments, would be removed. Under current law, the Secretary is required to finance outlier payments by a uniform offset to the national base operating payment amounts.
- 29 This estimate differs from that in Table 14 because the relative weights used here for DRGs and APR–DRGs are simulated for the process of analyzing policy options and are based on more recent data (see Appendixes C and D).





**A P P E N D I X A**

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**Mandate for report**

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## Mandate for report

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### Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (MMA)

#### SEC. 507. CLARIFICATIONS TO CERTAIN EXCEPTIONS TO MEDICARE LIMITS ON PHYSICIAN REFERRALS.

(a) LIMITS ON PHYSICIAN REFERRALS.—

(1) OWNERSHIP AND INVESTMENT INTERESTS IN WHOLE HOSPITALS.

(A) IN GENERAL.—Section 1877(d)(3) (42 U.S.C. 1395nn(d)(3)) is amended—

(i) by striking “, and” at the end of subparagraph

(A) and inserting a semicolon; and

(ii) by redesignating subparagraph (B) as subparagraph (C) and inserting after subparagraph (A) the following new subparagraph:

“(B) effective for the 18-month period beginning on the date of the enactment of the Medicare Prescription Drug, Improvement, and Modernization Act of 2003, the hospital is not a specialty hospital (as defined in subsection (h)(7)); and”.

(B) DEFINITION.—Section 1877(h) (42 U.S.C. 1395nn(h)) is amended by adding at the end the following:

“(7) SPECIALTY HOSPITAL.—

“(A) IN GENERAL.—For purposes of this section, except as provided in subparagraph (B), the term ‘specialty hospital’ means a subsection (d) hospital (as defined in section 1886(d)(1)(B)) that is primarily or exclusively engaged in the care and treatment of one of the following categories:

“(i) Patients with a cardiac condition.

“(ii) Patients with an orthopedic condition.

“(iii) Patients receiving a surgical procedure.

“(iv) Any other specialized category of services that the Secretary designates as inconsistent with the purpose of permitting physician ownership and investment interests in a hospital under this section.

“(B) EXCEPTION.—For purposes of this section, the term ‘specialty hospital’ does not include any hospital—

“(i) determined by the Secretary—

“(I) to be in operation before November 18, 2003; or

“(II) under development as of such date;

“(ii) for which the number of physician investors at any time on or after such date is no greater than the number of such investors as of such date;

“(iii) for which the type of categories described in subparagraph (A) at any time on or after such date is no different than the type of such categories as of such date;

“(iv) for which any increase in the number of beds occurs only in the facilities on the main campus of the hospital and does not exceed 50 percent of the number of beds in the hospital as of November 18, 2003, or 5 beds, whichever is greater; and

“(v) that meets such other requirements as the Secretary may specify.”.

(2) OWNERSHIP AND INVESTMENT INTERESTS IN A RURAL PROVIDER.—

Section 1877(d)(2) (42 U.S.C. 1395nn(d)(2)) is amended to read as follows:

“(2) RURAL PROVIDERS.—In the case of designated health services furnished in a rural area (as defined in section 1886(d)(2)(D)) by an entity, if—

“(A) substantially all of the designated health services furnished by the entity are furnished to individuals residing in such a rural area; and

“(B) effective for the 18-month period beginning on the date of the enactment of the Medicare Prescription Drug, Improvement, and Modernization Act of 2003, the entity is not a specialty hospital (as defined in subsection (h)(7)).”.

(b) APPLICATION OF EXCEPTION FOR HOSPITALS UNDER DEVELOPMENT.—

For purposes of section 1877(h)(7)(B)(i)(II) of the Social Security Act, as added by subsection (a)(1)(B), in determining whether a hospital is under development as of November 18, 2003, the Secretary shall consider—

(1) whether architectural plans have been completed, funding has been received, zoning requirements have been met, and necessary approvals from appropriate State agencies have been received; and

(2) any other evidence the Secretary determines would indicate whether a hospital is under development as of such date.

(c) STUDIES.—

(1) MEDPAC STUDY.—The Medicare Payment Advisory Commission, in consultation with the Comptroller General of the United States, shall conduct a study to determine—

(A) any differences in the costs of health care services furnished to patients by physician-owned specialty hospitals and the costs of such services furnished by local full-service community hospitals within specific diagnosis related groups;

(B) the extent to which specialty hospitals, relative to local full-service community hospitals, treat patients in certain diagnosis-related groups within a category, such as cardiology, and an analysis of the selection;

(C) the financial impact of physician-owned specialty hospitals on local full-service community hospitals;

(D) how the current diagnosis-related group system should be updated to better reflect the cost of delivering care in a hospital setting; and

(E) the proportions of payments received, by type of payer, between the specialty hospitals and local full-service community hospitals.

(2) HHS STUDY.—The Secretary shall conduct a study of a representative sample of specialty hospitals—

(A) to determine the percentage of patients admitted to physician-owned specialty hospitals who are referred by physicians with an ownership interest;

(B) to determine the referral patterns of physician owners, including the percentage of patients they referred to physician-owned specialty hospitals and the percentage of patients they referred to local full-service community hospitals for the same condition;

(C) to compare the quality of care furnished in physician-owned specialty hospitals and in local full-service community hospitals for similar conditions and patient satisfaction with such care; and

(D) to assess the differences in uncompensated care, as defined by the Secretary, between the specialty hospital and local full-service community hospitals, and the relative value of any tax exemption available to such hospitals.

(3) REPORTS.—Not later than 15 months after the date of the enactment of this Act, the Commission and the Secretary, respectively, shall each submit to Congress a report on the studies conducted under paragraphs (1) and (2), respectively, and shall include any recommendations for legislation or administrative changes.



**A P P E N D I X   B**

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**Laws governing financial  
arrangements between physicians  
and health care providers**

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## Laws governing financial arrangements between physicians and health care providers

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Over the past 30 years, the Congress has enacted anti-kickback and patient referral laws intended to discourage physicians and other health care providers from improperly profiting from referrals of Medicare and Medicaid patients. Both the Congress and the Department of Health and Human Services have created several exceptions to the laws that permit certain physician-facility arrangements, resulting in a complex web of laws and regulations governing the financial arrangements between physicians and health care providers.<sup>1</sup>

### The legal restrictions

The Congress has enacted two laws to deter inappropriate physician referrals to health care facilities: the federal anti-kickback statute, originally passed in 1972, and the Ethics in Patient Referrals Act (also known as the Stark law after California Rep. Fortney Pete Stark, its principal sponsor), originally enacted in 1989 (Stark I) and expanded in 1993 (Stark II). These laws reflect two general concerns about physicians referring patients to facilities in which they have ownership.

- Physician ownership creates a financial incentive to order additional services.
- Rather than considering quality and convenience, physician-investors might refer patients to the facility they own, which undercuts fair competition among providers.

### Anti-kickback statute

The anti-kickback law is a criminal statute that broadly prohibits the purposeful offer, payment, or receipt of anything of value to induce the referral of patients for services reimbursable by a federal health care program. Like all federal criminal statutes, the Department of Justice is the primary enforcement agency, although the Office of Inspector General (OIG) of the Department of Health and Human Services participates through its regulatory and advisory opinion process. To enforce this law, prosecutors must prove beyond a reasonable doubt that the parties involved intended to violate it, which has resulted in few cases being successfully litigated and little discouragement of physician ownership of health care ancillary facilities.

In the 1980s, syndicators of a wide range of ancillary service entities (such as clinical laboratories and imaging centers) began offering equity interests in the ventures to physicians who were in a position to refer large numbers of patients to the facilities. The trend toward physician investment in ancillary ventures was sharply criticized in some quarters. Dr. Arnold Relman, the then editor of the *New England Journal of Medicine*, vocally criticized the ethics of these physician self-referral arrangements. The American College of Physicians adopted a provision in its code of ethics stating that “physicians should avoid any business arrangement that might, because of personal gain, influence their decisions in patient care.” In 1986 the Institute of Medicine also criticized physician self-referral practices and recommended legislation to address the issue.

In 1989 the government began to scrutinize physician investments in ancillary facilities. Federal officials issued an unprecedented “Special Fraud Alert,” warning the health care industry that abusive joint ventures with referral sources would be prosecuted under the anti-kickback statute. The OIG also sought to exclude a major syndicator of physician clinical laboratory ventures, the Hanlester Network, from the Medicare

and Medicaid programs on the grounds that the ventures violated the anti-kickback statute. The government argued that the selective offering of investment shares in a clinical laboratory to physicians who could profit indirectly from their referrals to the laboratory violated the statute.

### **Stark law**

During this time period, the Congress considered financial arrangements between physicians and health care entities and enacted the original Stark law (Stark I). Stark I prohibits physicians from referring Medicare or Medicaid patients for clinical laboratory services to labs with which they have a financial relationship (either ownership or compensation) unless the relationship fits within a specified exception. It also prohibits labs from submitting claims for services provided to patients referred by a physician with whom the lab has a financial relationship. Unlike the anti-kickback statute, the Stark law prohibits certain financial relationships regardless of any intention to encourage referrals.

Over the next several years a number of studies showed that physician investment in ancillary facilities increased the use of ancillary services and their costs to Medicare and Medicaid. At the same time, the shortcomings of relying on case-by-case enforcement using the anti-kickback statute to regulate physician ownership of ancillary joint ventures were becoming more apparent. OIG only had the resources to investigate and prosecute a few cases, and even those took years because of inevitable appeals. In its 1995 decision of *U.S. v. Hanlester Laboratories*, a federal appeals court rejected the government's position that the selective offering of investment shares in a clinical laboratory to physicians who could profit indirectly from their referrals to the laboratory violated the anti-kickback statute. At a minimum, the court indicated, some other culpable conduct was necessary, such as rewarding physicians who refer many patients or punishing physicians who refer few patients.

By the time of the *Hanlester* decision, the Congress amended Stark I to apply its prohibitions to a broad array of health care services. Stark II took effect on January 1, 1995, and replaced the anti-kickback statute as the primary law regulating physician investment in ancillary joint ventures. As expanded, the law applies to the following "designated health services": clinical laboratory, physical and occupational therapy, radiology, radiation, home health care, hospital, outpatient prescription drugs, and many types of equipment and supplies.<sup>2</sup>

Stark II permits physicians to refer Medicare or Medicaid patients to several types of physician-owned facilities, including:

- ASCs for surgical services only, and
- hospitals, as long as the physician's investment interest is in the whole hospital and not a subdivision or part of the hospital, and the physician is authorized to perform services at the hospital.<sup>3</sup>

The law permits physician investment in whole hospitals because hospitals generally provide a wide array of services. Thus, referrals by an individual physician-investor would theoretically have a limited effect on overall hospital profits. The law also allows physicians to provide ancillary services in their offices, such as laboratory tests or X-rays. The exception reflected a judgment that there often is a clear need for quick turnaround time on crucial tests (Congressional Record 1989).<sup>4</sup>

The Congress may have decided to exclude ASCs from the Stark law because OIG concluded that physicians' investment in an ASC where they perform services involves minimal risk of overuse. OIG stated that an ASC is, for practical purposes, an extension of a physician's office practice because physicians who invest in ASCs routinely perform professional services there (OIG 1998). The OIG also indicated that physician ownership (and the additional receipt of a portion of the ASC facility fee) would not substantially increase the risk of overuse because physicians already have an incentive to perform surgery to generate a professional fee. The Stark law, however, only excludes services that are part of the bundled ASC surgical fee; other services that might be provided by the ASC, such as laboratory or imaging tests that are paid separately, are covered by the Stark prohibitions on self-referral. On the other hand, the whole-hospital exception applies to all services billed by the hospital. For example, the exception permits physicians who invest in a hospital to share in the profits from ancillary services provided by the hospital (such as radiology and laboratory) whether or not the physicians perform them.

In 1999, OIG applied these rationales to establish "safe harbors" that protect physician investments in ASCs from prosecution under the anti-kickback statute (OIG 1999a).<sup>5</sup> The ASC safe harbors are limited to physicians who routinely use the facilities and to facilities that do not provide ancillary services other than those included in Medicare's bundled ASC facility fee. These two conditions curtail the incentive to overuse services and to profit from services physicians do not personally perform.

In January 2001, CMS issued the first installment of the final Stark II regulation, clarifying the exact boundaries of the Stark prohibitions and exceptions. For example, the rule permitted physician ownership of entities that provide services and equipment to providers of designated health services, so long as the ownership interest is not in the actual entity submitting the claim to Medicare or Medicaid. Physicians who own an entity providing services or equipment to a health care provider have a financial incentive to refer patients to that provider, similar to the incentive created by direct ownership of a provider (MedPAC 2005).

### **Specialty hospital moratorium**

Although the whole-hospital exception was originally intended to apply to full-service hospitals, many physician-owned single-specialty hospitals now take advantage of it. Because specialty hospitals derive their revenues from a limited range of services, the opportunity for an individual physician-investor to influence hospital profits is greater than with full-service hospitals, which creates a larger financial incentive to refer patients to the hospitals. Legislation introduced in 2003 would have amended the Stark law to prohibit physicians from investing on preferential terms in specialty hospitals to which they refer Medicare or Medicaid patients. This led to a provision in the MMA that imposes an 18-month moratorium during which physician-investors in new single-specialty hospitals may not refer Medicare or Medicaid patients to those hospitals.

### **Hospital strategies to influence physician referrals**

The anti-kickback statute prohibits hospitals from offering anything of value to physicians to influence their referrals. Because the courts have interpreted the law to prohibit any payment where one purpose is to encourage patient referrals, even payments at fair market value could violate the statute. OIG has interpreted other statutes to prohibit hospitals from engaging in gainsharing arrangements in which hospitals share cost savings with physicians who cooperate in reengineering clinical care in the hospital to reduce costs (see below). Despite these restrictions, hospitals have used several strategies to cultivate medical staff loyalty, including office practice support, acquisition of practices, partnering, and restrictions on medical staff privileges (economic credentialing).

## **Practice support**

Support comes in many guises, including recruitment of physicians, subsidized space in medical office buildings, malpractice insurance subsidies, provision of capital (such as equipment), managed care contracting support, and low-interest loans. Although not technically practice support, some hospitals supplement physician income through medical directorships and, increasingly, through payments for on-call coverage. If the support is provided to the physicians at less-than-fair-market prices, the hospital is considered to have paid physicians to indirectly influence their referrals and the activities could be subject to the anti-kickback and Stark laws.

## **Acquisition of physician practices**

In the 1990s, a number of hospitals responded to the perceived threat from managed care by purchasing physician practices. The acquisition of physician practices was thought to have three principal advantages for hospitals: The practice provided hospitals with a source of patients; the combination of physicians and hospitals was expected to give them greater bargaining power with managed care payers; and this arrangement protected hospitals' patient bases from being purchased by competitors. Many of the expected efficiencies and cost savings did not materialize, however, as managing physicians turned out to be much more difficult than expected. Many practices acquired by hospitals lost considerable amounts of money. As a result, several hospitals have since returned the practices to the physicians at a substantial loss.

The Stark law protects hospital payments to employed physicians as long as the compensation is fair market value for services performed by the physicians and does not take into account the volume or value of their referrals to the hospital. The Stark rules allow hospitals to require that employed physicians refer patients to the hospital-employer; however, this right is subject to the patient's preferences and insurance coverage and the physician's professional judgment. Several substantial legal settlements have alleged that hospitals violated the Stark and anti-kickback laws by first overpaying for the physician practices and then overcompensating the employed physicians.

## **Partnering**

Many hospitals have increasingly sought to partner with physicians on their medical staffs. By doing so, they can enlist staff in creating more efficient hospital operations and in cooperating in ventures in which they might otherwise compete with physicians. The former initiative is best represented by gain-sharing arrangements and the latter by hospital-physician ventures, such as ambulatory surgical centers, cardiac catheterization facilities, and imaging centers. The anti-kickback statute and the Stark law have historically imposed significant obstacles to some joint-venture arrangements.

## ***Gainsharing***

In the late 1990s, consultants began to promote gainsharing arrangements.<sup>6</sup> Those efforts were largely halted in response to a special advisory bulletin that OIG issued in 1999 stating that gainsharing arrangements were prohibited by a civil monetary penalty (CMP) provision in the Social Security Act that prohibits hospitals from offering physicians financial incentives to reduce or limit services to Medicare beneficiaries (OIG 1999b).<sup>7</sup> Since OIG's advisory bulletin, there has been little reported activity involving gainsharing with respect to Medicare and Medicaid patients.

OIG stated that these arrangements are problematic because they create incentives for physicians to withhold or reduce care to patients and to refer patients to the hospital with which they have the most lucrative arrangement. Moreover, these arrangements can potentially be used to disguise kickbacks, either from hospitals to physicians who refer patients to them or from surgeons to physicians who refer cases to them (for example, savings from cardiac surgery could be shared with cardiologists, the surgeons' principal referral source). OIG acknowledged, however, that a well-designed arrangement could result in better quality care at lower costs. Nevertheless, OIG concluded that it lacked the regulatory authority to require the necessary safeguards that would ensure that cost-saving measures do not reduce quality.

In 2001, OIG approved a very narrow gainsharing arrangement in an advisory opinion (OIG 2001). That arrangement involved a hospital paying a surgical group half of the first-year savings from specific cost-saving measures in which the surgeons participated. OIG concluded that the plan technically violated the CMP provision, but it did not impose sanctions because the agreement had several features that protected the quality of patient care. For example, the plan clearly identified specific actions that would produce savings, such as curbing the inappropriate use of supplies. OIG also stated that the agreement would not likely be used to financially reward physicians for referring patients to the hospital—a potential violation of the anti-kickback statute.

In 2003, CMS approved an eight-hospital demonstration of gainsharing, but was stopped from implementing it by a federal district court ruling in 2004. The ruling concluded that, without an advisory opinion from OIG, CMS had no authority to approve the demonstration due to the CMP provision (United States District Court 2004).

### **Restrictions on medical staff privileges**

As physicians expand into activities where they compete directly with local hospitals, hospitals are exploring whether and under what circumstances they can restrict the privileges of physicians who are competing with them. One type of restriction prohibits medical staff members from having certain enumerated financial conflicts of interest, such as investments in competing hospitals or ambulatory surgical centers. A second type of restriction imposes a loyalty test on medical staff members, requiring the staff to admit a certain percentage of their patients who require hospitalization to the hospital. In 2003, OIG solicited comments on the legality of such practices under the anti-kickback statute. At issue is whether hospital privileges might constitute remuneration under the statute.

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## Endnotes

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- 1 This appendix is based on a report prepared by a MedPAC contractor, Kevin McAnaney (McAnaney 2004).
- 2 The law applies to durable medical equipment and supplies; parenteral and enteral nutrients, equipment, and supplies; and prosthetic and orthotic devices and supplies.
- 3 The hospital exception in the final Stark II statute was substantially broader than Rep. Pete Stark's original 1989 proposal which would only have grandfathered preexisting physician investment interests in hospitals. The amendment protected Columbia Healthcare, which was founded in 1987 and had expanded rapidly using a strategy of offering referring physicians equity investments in its hospitals.
- 4 The in-office ancillary exception did not permit physicians to provide most durable medical equipment and parenteral and enteral nutrition services in their offices because there was no clear justification for permitting referring physicians to provide these services.
- 5 Safe harbors protect investments in ASCs made by surgeons, certain nonsurgical specialists, and hospitals.
- 6 Consultants may have been encouraged by the success of a CMS demonstration of a global payment for coronary artery bypass graft (CABG) surgery. This demonstration reimbursed hospitals and physicians with a single global payment for CABG that was less than the aggregate of the Part A hospital and Part B physician services payments, but permitted the hospitals and physicians to divide it. By reducing the hospitals' costs, both hospitals and physicians could earn more. See <http://www.cms.hhs.gov/researchers/reports/1998/oregon2.pdf>.
- 7 The CMP was enacted in response to reports that hospitals were giving incentives to physicians to discharge patients "sicker and quicker" under the Medicare inpatient prospective payment system. The statute permits the Secretary to regulate physician incentive arrangements with managed care plans that enroll Medicare beneficiaries, but not physician arrangements with hospitals.





**A P P E N D I X C**

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**Data and methods used in this report**  
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## Data and methods used in this report

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This appendix describes the data and methods we used to examine issues related to physician-owned specialty hospitals.

### Data sources

The analyses described in this report focus on physician-owned specialty and community hospitals paid under Medicare's hospital inpatient prospective payment system (IPPS) during fiscal year 2002. The data we used came primarily from the following sources:

- a national survey we conducted to identify physician-owned and other specialized hospitals and determine their mixes of payers;
- Medicare inpatient claims that were selected to match hospitals' most recent Medicare cost reports available at the end of 2003;
- fiscal year 2002 Medicare cost reports and IPPS Impact file;
- Medicare cost reports for fiscal year 1996 for community hospitals located in markets that have a specialty heart hospital; and
- Medicare hospital inpatient claims from fiscal year 1996 and 2002 MedPAR files.

Most of these data sources need little description because they are available to the public from the Centers for Medicare and Medicaid Services (CMS). These include the hospital inpatient claims files—standard analytic files (SAF) and MedPAR files—the Medicare cost reports, and the IPPS Impact file. The only unique data source we used is the national survey of specialized hospitals, which is described below.

Our survey involved a two-step process. First we identified the population of relatively specialized hospitals that met two criteria. They:

- specialized in certain services during fiscal year 2002—at least 45 percent of their Medicare cases were in cardiac, orthopedic, or surgical services or at least 66 percent were in two major diagnostic categories (MDCs), with the primary one being cardiac, orthopedic, or surgical cases.
- had a minimum volume of at least 25 total Medicare cases during 2002 (to ensure a minimum volume of Medicare cases for analysis).

Second, we surveyed executives from the 134 specialized hospitals that met our criteria to determine whether physicians fully or partially owned the hospital in 2002. We also inquired about the hospitals' payer mix. We received 110 responses, an 82 percent response rate. In most instances, the respondent was either the CFO or the CEO of the organization. The remaining respondents held other leadership positions in the hospital, such as chief medical officer.

For the 24 nonrespondents, we used secondary data sources to examine the hospital's nonprofit status. If a hospital was a nonprofit or government entity, we assumed it was not physician owned. In the case of for-profit hospitals, we made a second attempt to contact hospital officers to determine ownership.

Through the combination of survey data and secondary data on nonprofit status we were able to identify 48 physician-owned hospitals and 78 specialized hospitals that were not physician owned (the latter are termed “peer” hospitals in our analysis). The remaining eight specialized hospitals (6 percent of our population) were excluded from our study because we lacked complete information on them.

## **Methods**

We describe the methods we used in analyzing:

- differences in standardized costs per discharge and lengths of stay between physician-owned specialty and community hospitals;
- the extent to which physician-owned heart hospitals may cause an increase in per capita service use;
- the effect of physician-owned hospitals on the financial performance of local community hospitals;
- differences in relative profitability among types of cases under Medicare’s IPPS;
- the extent to which physician-owned specialty and other hospitals may benefit from patient selection; and
- the effects of options for refining Medicare’s IPPS payment policies.

### **Comparing relative costs per discharge and lengths of stay**

As discussed in the report, we compared relative costs and lengths of stay in physician-owned specialty and full-service community hospitals. Relative costs were based on Medicare inpatient costs per discharge reported in hospitals’ fiscal year 2002 cost reports as of August 2004. We used data from the IPPS Impact file for fiscal year 2002 and our own estimated case-mix index based on all-patient refined diagnosis-related groups (APR–DRGs) to standardize hospitals’ reported costs to remove the effects of differences in severity-adjusted case mix, market input price levels, and the extent to which they train residents and serve poor patients.<sup>1</sup> To test differences in standardized costs for statistical significance, we used the Tukey mean separation test, with a  $p < .05$  criterion.

The comparisons of lengths of stay (LOS) between physician-owned specialty and community hospitals were based on data from the fiscal year 2002 MedPAR claims file. We compared hospitals’ actual average LOS with their expected averages. The expected average LOS was based on the hospital’s (or hospital group’s) mix of cases among severity classes within APR–DRGs and the regional average LOS for each severity class in the hospital’s geographic location. We used the regional average as the standard because physician-owned specialty and peer specialty hospitals are not spread uniformly across all geographic regions, and we know that LOS patterns differ strongly across regions. Regions are defined by the nine Census divisions. The resulting expected LOS tells us what each hospital’s LOS would be, given its mix of cases, if it had the regional average LOS for each severity class within each APR–DRG.

We used the expected average LOS to calculate the ratio of the actual average LOS for a hospital or a group to its expected LOS. These ratios tell us whether a hospital or a group has a pattern of relatively longer or shorter LOS (controlling for differences in case-mix severity) than other hospitals in the same region. We used the Tukey mean separation test to evaluate the statistical significance of differences in the ratios among hospital groups.

## **Estimating induced demand**

We estimated the extent to which markets with physician-owned heart hospitals experienced more rapid growth than other markets in Medicare beneficiaries' per capita use of profitable cardiac services. We examined Medicare beneficiaries' use rates in the market, rather than each hospital's admissions, to control for shifting of market shares from the community hospitals to the specialty hospital. Markets are defined as the 306 hospital referral regions (HRRs) in the Dartmouth Atlas of Healthcare.<sup>2</sup>

We identified 11 physician-owned cardiac hospitals in 10 markets that opened between 1997 and 2001. In these markets, physician-owned heart hospitals' share of total cardiac surgeries increased from 0 percent in 1996 to between 20 percent and 45 percent in 2002. We compared changes in the volume of surgeries between 1996 and 2002 in these 10 markets with changes in volume in 295 markets without physician-owned heart hospitals. At the starting point in 1996, none of the 11 physician-owned facilities had opened; by 2002 all of them had been open for more than one full year.

We tested growth rates of surgical cardiac discharges, medical cardiac discharges, CABG, angioplasties, and defibrillator implantation. We identified CABG discharges using DRGs. Defibrillator implantation and angioplasty were identified using procedure codes from claims data. To test for significant differences in growth rates, we used a standard T test.

## **Measuring financial impact on community hospitals**

We also examined the effect of market entry by physician-owned hospitals on full-service community hospitals' financial performance. We first identified competing full-service community hospitals that might be affected if a physician-owned hospital opened in the same market. A community hospital is considered to compete with a physician-owned heart hospital in the same cardiac surgery market if it performed at least 10 bypass or angioplasty surgeries on Medicare beneficiaries in fiscal year 2002. A community hospital is deemed to compete with a physician-owned orthopedic or surgical hospital in the same general surgery market if it had at least five Medicare surgical cases in fiscal year 2002.

We used the 306 HRRs to define markets for cardiac surgery. The markets for orthopedic and general surgery were defined by the 803 hospital service areas (HSAs) for routine Medicare services as determined by Makuc et al. (1991). We used different market definitions because patients often travel farther for cardiovascular surgery than for general surgery, which is available in more hospitals.

Among the 48 physician-owned specialty hospitals that we identified, 22 opened between 1998 and 2001. The remaining 26 were opened either before 1998 or in 2002. We excluded hospitals that opened before 1998 because we did not have readily available pre-opening financial data for community hospitals operating in the same market. Similarly, we excluded hospitals that opened in 2002 because we did not have a full year of post-opening financial data for community hospitals operating in the same market.

The 8 heart hospitals and 14 orthopedic and surgical hospitals that opened between 1998 and 2001 are located in 17 markets. In those 17 markets, there are 35 hospitals competing with physician-owned heart hospitals for open-heart surgery and angioplasty cases and 50 hospitals competing with orthopedic and surgical hospitals for surgical cases.

We compared financial data for these 85 “competitor” hospitals with similar data for a group of “comparison” community hospitals in markets without specialty hospitals. Comparison hospitals included 2,132 community hospitals that had at least 65 beds and reported all necessary cost report information for 1997–2002. We chose 65 beds as a cutoff point for the comparison group, since all heart hospital “competitor” hospitals have at least 65 beds, as do most hospitals that compete with surgical and orthopedic hospitals. This criterion removes very small rural hospitals which usually do not compete with heart hospitals.

We compared competitor and comparison hospitals using a multivariate model. In estimating the model, we limited the sample to 1,529 hospitals that had at least 5,000 total inpatient discharges. This restriction helps to ensure that the coefficients in the model accurately reflect the impact of heart hospital competition on the 35 hospitals that are competing with physician-owned heart hospitals.

### **Estimating relative profitability among case types**

To assess hospitals’ opportunities to benefit from the selection of patients they treat, we needed methods for evaluating whether certain Medicare patients are relatively more profitable than other patients. If profitability differences exist, we also needed a method for evaluating whether physician-owned specialty hospitals or other hospitals treat a favorable or unfavorable selection of patients. Hospitals could have a favorable selection of patients if they specialized in certain relatively profitable groups of patients, or they could treat relatively profitable (low-cost) patients within any broad patient category.

We sorted Medicare patients into categories using two patient classification systems: (1) diagnosis-related groups (DRGs) used in the IPPS for fiscal year 2002 (DRG grouper version 18) and (2) all-patient refined diagnosis-related groups (APR–DRGs) and severity classes—“refined” DRGs—(APR–DRG version 15). APR–DRGs make greater use of secondary diagnoses than DRGs to sort patients with a given condition and treatment strategy (an APR–DRG) into four levels of illness severity (classes 1–4). For each APR–DRG, class 1 patients tend to be relatively healthier and uncomplicated, while class 4 patients usually have multiple coexisting conditions, major complications, or both.

We measured the *relative* profitability of different DRGs and of severity classes within APR–DRGs under Medicare’s IPPS in fiscal year 2002. We focused on relative profitability because the concern underlying this analysis is that the current DRG payment weights may cause differences in profitability across categories. Absolute levels of costs, payments, and profitability may change over time, but we are primarily interested in the relative attractiveness of different types of patients. The relative profitability of a specific DRG is defined as the payment-to-cost ratio for that DRG divided by the overall average payment-to-cost ratio. For example, if the payment-to-cost ratio for DRG 107 averaged 1.10 (payments were 110 percent of costs) and the overall average payment-to-cost ratio was 1.04, then we would say that the relative profitability of DRG 107 was 1.10/1.04, or 1.06 times the average. We computed relative payment-to-cost ratios for APR–DRG severity class combinations using the same method.

Relative payment-to-cost ratios were based on estimated costs and payments for 10.3 million Medicare hospital inpatient claims selected to match hospitals’ latest available Medicare cost reports as of December 31, 2003. Estimated costs were based on claim charges adjusted by the hospital’s cost-to-charge ratio for the appropriate department. This method helps to reduce distortions in the cost estimates that result from differences in hospitals’ markups across departments. Because the claims span a period of about 30 months ending on September 30, 2002, we inflated the cost estimates to reflect the midpoint of fiscal year 2002.

Estimated payments were based on MedPAC's hospital inpatient payment model for fiscal year 2002. We estimated payments under fiscal year 2002 policies but calibrated outlier payments to exhaust the intended outlier spending. We made the estimates this way to avoid distortions in the relative profitability estimates that might have resulted from the effects of outlier gaming that some hospitals were engaged in during the time period of our data.

We calculated relative profitability measures based on aggregate payment-to-cost ratios for DRGs and APR-DRG severity classes. That is, we summarized estimated payments across all cases in a category and divided the total by the sum of estimated costs across the same cases. We turned these ratios into relative profitability measures by dividing them by the overall aggregate payment-to-cost ratio.

### **Measuring patient selection at specialty hospitals**

We had two selection questions:

1. Are specialty hospitals focusing on DRGs that tend to be relatively more profitable than average? This question asks whether the hospital is specializing in profitable types of services (DRGs).
2. Are specialty hospitals treating patients within APR-DRGs that are in severity classes that are relatively more profitable than average? This asks whether the hospital is obtaining patients who are expected to be relatively more profitable because their conditions are straightforward and uncomplicated.

To answer the first question, we developed an index of each hospital's expected relative profitability. The index has two components: the hospital's mix of patients across DRGs in the 2002 MedPAR file and the national average relative profitability ratio for each DRG. We weighted hospitals' shares of cases among DRGs by the national average cost per case in each DRG, reflecting the different shares of hospital expenditures associated with different DRGs. Thus, the index is equal to the expenditure weighted relative profitability of the DRGs treated in the hospital. For example, assume a hospital treats two patients. The first is in a DRG with a relative payment-to-cost ratio (profitability) that is 1.2 times the national average and national average cost per discharge equals \$20,000. The second patient is in a DRG with a relative payment-to-cost ratio that is 0.8 times the national average and the national average cost per discharge is \$5,000. Given these assumptions, the weighted expected relative profitability for the hospital would be:

$$(1.2 \times 20,000 + 0.8 \times 5,000) / (20,000 + 5,000) = 1.12$$

The hypothetical hospital would have an expected Medicare payment-to-cost ratio that is 1.12 times the national average. The overall expected profitability is above 1.0 because a higher weight is given to the DRG with higher costs and higher payments. This measure tells us about the relative profitability of the hospital's case mix if the hospital had average performance in each DRG. It does not measure the hospital's actual profitability. When this method is applied to the national average case mix for all community hospitals in 2002, the expected relative profitability ratio equals 1.0.

To answer the second question, we developed an index of each hospital's expected relative profitability using the hospital's mix of cases across APR-DRG severity classes and the corresponding national average relative profitability ratios for those categories.<sup>3</sup> Once again, the weighted average is computed

using expenditure weights. As before, a hospital's expected relative profitability may or may not match its actual profitability. For example, the expected relative profitability might not be achieved if the hospital had above-average costs. Likewise, if the hospital was more efficient than the average hospital, its actual relative profitability would be above the expected value.

### **Evaluating options for refining Medicare's IPPS payment policies**

As described in the report, we examined four potential refinements to Medicare's policies and methods:

- Refine the DRG definitions to account more completely for severity differences among patients.
- Change the method of calculating the relative weights, substituting the national average of hospital-specific relative costs for the national average of standardized charges.
- Change the data used to calculate the relative weights, substituting estimated costs for standardized charges.
- Adjust the relative cost weights to account for differences in the expected proportion of outlier payments among refined DRGs.

To illustrate the potential benefits that might be obtained from refining the DRGs, we used (but do not endorse) the severity classes of APR-DRGs. We also evaluated an alternative method of calculating DRG relative weights that would make them more accurate. In this method, the charges (or estimated costs) for each hospital's cases are converted to hospital-specific relative values by dividing them by the hospital's average charge (cost) per case and then adjusting the relative values for the hospital's case mix.<sup>4</sup> Then the national relative weight in each DRG is calculated as the national average of the adjusted relative values across all cases in the DRG.

Although this hospital relative-value method removes the effects of hospital-wide differences in charge markups or costs, it does not remove the effects of differences in markups across hospital service departments or among services within departments. For example, if most hospitals were to mark up operating room use by 400 percent and routine room and board services by 20 percent, then the relative weights still would be overstated for DRGs in which operating room services were important. Similarly, the weights would be understated for DRGs in which patients use a lot of routine services.

To address this problem, we evaluated changing the basis of the weights from standardized charges to costs. Using costs instead of charges removes the effects of differences in markups across hospital departments, which are often substantial. When combined with the hospital relative-value method, this approach has the potential to remove from the weights many—though not all—of the distortions that result from differences in hospitals' charging practices.

We also evaluated a method of reducing the distortion caused by including the charges for most outlier cases in the calculation of the relative weights. This method would reduce each relative weight to offset anticipated outlier payments for cases included in the patient category. As a result, the relative weights would account for differences in the prevalence of outlier cases and payments across categories and approximate more accurately the relative costliness of typical cases in each category.



We did not fully simulate this outlier policy with our current data. We ran a full simulation in MedPAC's *Report to the Congress: Selected Medicare Issues*, June 2000, using data from fiscal year 1997. The discussion of the outlier option in the report is based on our current approximate estimates and the findings from the full simulation in 2000.

We focused our empirical evaluation of these payment policy options primarily on two issues: the extent to which these policy options would affect payment accuracy across and within DRGs and how the options would change IPPS payments to hospitals. To evaluate the effects each policy option would have on payment accuracy, we focused on changes in the national average relative profitability of DRGs and APR–DRG severity classes. As described earlier, the relative profitability for a specific DRG is defined as the payment-to-cost ratio for that DRG divided by the national average payment-to-cost ratio for all Medicare discharges.

We estimated payments for five policy options including current (2002) policy and the four combinations of payment refinements described in the report. All payment estimates, including current policy payments, reflect DRG (or APR–DRG) relative weights calculated by the appropriate methods using the 10.3 million claims for which we had both charges and estimated costs. That is, for these comparisons, we recomputed “current policy” DRG relative weights similar to those actually used in fiscal year 2002 but based on the same data we used in computing relative weights for the other policy options. This approach ensures that estimated differences in relative profitability between current policy and any of the policy options reflect only differences in policies, not differences in the underlying data.<sup>5</sup>

We also wanted to measure the extent to which the various policy options might alter the potential benefits of favorable patient selection for hospitals. For this purpose, we calculated measures of expected relative profitability for hospitals and hospital groups, again using the methods described earlier. That is, we measured hospitals' expected relative profitability based on their mix of Medicare cases among DRGs or APR–DRG severity classes and the national average relative profitability in each category under each policy option. The expected relative profitability measures tell us what the hospital's relative profitability would look like, given its mix of cases, if it had the national average relative profitability in each DRG or APR–DRG severity class under each policy option.

To measure the impact of the policy options on hospitals' IPPS payments, we estimated the percentage change in payments for each option relative to the payments under current policy. We applied a small budget-neutrality factor to the payment estimates under each option to ensure that aggregate payments would remain the same as under current policies. This is consistent with current law, which requires the Secretary to ensure that projected payments resulting from changes in the DRG definitions and weights remain budget neutral.

## Endnotes

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- 1 We excluded 4 of the 48 physician-owned specialty hospitals from this analysis because we lacked information about their IPPS wage indexes.
- 2 The HRRs were created by examining where Medicare patients went for major cardiovascular surgery. Each region has at least one hospital that performs major cardiovascular procedures and neurosurgery. The 306 regions ranged in population from 126,329 to 9,288,694 in 1996.
- 3 Note that APR–DRGs are not the same as DRGs. For example, bypass surgeries are grouped into three DRGs, but they are grouped into two APR–DRGs where each one has four severity levels.
- 4 The adjustment for case mix is necessary to scale the relative values consistently across hospitals, because a hospital’s overall average charge (or cost), and the level of its relative values, reflect its mix of cases.
- 5 The actual DRG relative weights for fiscal year 2002 were computed using charges on claims included in the fiscal year 2000 MedPAR file. The claims used here are primarily from fiscal years 2001 and 2002.

**A P P E N D I X   D**

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**Effect of policy options**

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## Effect of policy options

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This appendix provides estimates of the extent to which the policy options recommended in the report would change the relative profitability of patient categories defined by the diagnosis-related groups (DRGs) and severity classes within all-patient refined diagnosis-related groups (APR–DRGs). These estimated relative profitability ratios were calculated using estimated inpatient prospective payment system (IPPS) payments and costs for 10.3 million Medicare inpatient claims (see Appendix C).

The first table (Table D-1) shows that, compared with current policy, differences in relative profitability across DRGs and severity classes of APR–DRGs would diminish with the adoption of each additional policy change. Relative profitability ratios would become increasingly uniform, moving toward 1.0, the national average relative profitability ratio. This pattern holds across both DRGs (the top half of the table) and severity classes of APR–DRGs (the bottom half). These changes are measured in this table by the shares of estimated IPPS payments that would fall into patient categories that have relative profitability ratios within plus or minus 5 percent of the national average relative profitability ratio. The estimates in the top half of the table were used in creating Figure 4 of the report.

The remaining tables in this appendix show estimated relative profitability ratios for DRGs and severity classes of the corresponding APR–DRGs under current policy and each of the policy changes we recommended. The patient categories in each table were selected because they represent groups of patients frequently seen in specialty heart hospitals or their competitors (Table D-2), specialty orthopedic and surgical hospitals or their competitors (Table D-3), or nonsurgical patients generally seen in community hospitals but less frequently encountered in specialty hospitals (Table D-4).

In examining these estimates, note that the relative profitability ratios for current policy differ somewhat from those shown in Tables 10–13 in the report. These differences reflect intentional differences in the study objectives and the methods we used in the two analyses.

The estimates in Tables 10–13 show differences in relative profitability across and within DRGs under 2002 (“current”) policies as hospitals saw them in fiscal year 2002. Thus, we used the actual 2002 DRG weights in estimating IPPS payments for the cases in our claims file. The 2002 DRG relative weights reflect hospitals’ charges for claims in the fiscal year 2000 MedPAR file, which were the latest claims available at the time.

To analyze policy options for refining IPPS payments, we recalculated the DRG relative weights to estimate IPPS payments under current policy. This was necessary because all of the policy options under consideration entail changing the relative weights. To ensure comparability between payments under current policy and under each policy option, the relative weights in all instances must be based on the same set of cases. Otherwise, comparisons between current policy and the policy options would reflect both the policy changes under study and differences in the data underlying the relative weights.

Thus, we calculated and then recalibrated a new set of DRG relative weights using essentially the same methods CMS uses to recalibrate the weights and the cases in our claims file. These weights differ from the official 2002 weights primarily because they are based on later claims, from 2001 and 2002, rather than from 2000. The estimates in all of the tables in this appendix reflect the recalibrated weights.

**TABLE  
D-1****Opportunities for patient selection across and within DRGs**

	<b>Current policy</b>	<b>Hospital-specific relative weights</b>	<b>Plus APR-DRG</b>	<b>Plus cost- based weights</b>	<b>Plus adjusted outlier</b>
Percent of payments in DRGs with PCR:					
Below 0.95	30.1%	24.7%	26.5%	11.9%	4.9%
Between 0.95 and 1.05	34.5	49.2	53.3	72.8	85.7
Above 1.05	35.3	26.1	20.3	15.2	9.4
Percent of payments in APR-DRG severity categories with PCR:					
Below 0.95	30.7	30.9	27.1	5.8	0.1
Between 0.95 and 1.05	18.6	16.2	47.3	75.7	99.2
Above 1.05	50.7	52.9	25.5	18.5	0.7

Note: DRG (diagnosis-related group), APR-DRG (all-patient refined diagnosis-related group), PCR (national relative payment-to-cost ratio).  
The "Percent of payments in DRGs with PCR" rows were shown as Figure 4 in the report.

Source: MedPAC analysis of Medicare hospital inpatient claims and cost reports from CMS, fiscal year 2000–2002.

**TABLE  
D-2****National average relative payment-to-cost ratios across and within selected DRGs under different policy options, cardiovascular**

<b>DRG/APR-DRG severity level</b>	<b>Current policy</b>	<b>Hospital-specific relative weights</b>	<b>Plus APR-DRG</b>	<b>Plus cost-based weights</b>	<b>Plus adjusted outlier</b>
DRG 105 Cardiac valve and other major cardiothoracic procedure without cardiac cath (S)	1.09	1.06	1.04	1.00	0.97
APR-DRG 163 level 1	1.48	1.44	1.02	0.96	1.00
APR-DRG 163 level 2	1.32	1.28	1.01	0.96	0.99
APR-DRG 163 level 3	1.07	1.04	1.04	1.00	0.99
APR-DRG 163 level 4	0.80	0.78	1.10	1.06	0.98
DRG 107 Coronary bypass with cardiac cath (S)	1.10	1.04	1.05	0.99	1.00
APR-DRG 165 level 1	1.47	1.40	1.02	0.94	0.99
APR-DRG 165 level 2	1.27	1.21	1.02	0.95	0.99
APR-DRG 165 level 3	1.04	0.99	1.04	0.99	0.99
APR-DRG 165 level 4	0.80	0.77	1.10	1.04	0.98
DRG 109 Coronary bypass without PTCA or cardiac cath (S)	1.05	1.02	1.03	0.99	1.00
APR-DRG 166 level 1	1.35	1.31	1.00	0.94	0.99
APR-DRG 166 level 2	1.19	1.16	1.00	0.95	0.99
APR-DRG 166 level 3	0.96	0.93	1.02	0.98	0.99
APR-DRG 166 level 4	0.72	0.71	1.10	1.05	0.98
DRG 116 Other permanent cardiac pacemaker implantation (S)	1.00	0.98	0.99	0.97	0.99
APR-DRG 171 level 1	1.24	1.21	0.99	0.96	0.99
APR-DRG 171 level 2	1.05	1.03	0.98	0.96	0.99
APR-DRG 171 level 3	0.83	0.82	0.99	0.98	0.99
APR-DRG 171 level 4	0.63	0.62	1.03	1.03	1.00
DRG 516 Percutaneous cardiovascular procedure with acute myocardial infarction (S)	1.14	1.09	1.09	0.97	0.98
APR-DRG 174 level 1	1.45	1.38	1.11	0.95	0.99
APR-DRG 174 level 2	1.27	1.21	1.10	0.96	0.99
APR-DRG 174 level 3	0.97	0.92	1.07	0.98	0.99
APR-DRG 174 level 4	0.83	0.80	1.12	1.03	0.98
DRG 127 Heart failure and shock (M)	0.90	0.93	0.93	0.99	1.01
APR-DRG 194 level 1	1.43	1.49	0.91	0.97	1.02
APR-DRG 194 level 2	1.08	1.13	0.91	0.97	1.02
APR-DRG 194 level 3	0.72	0.75	0.93	0.99	1.01
APR-DRG 194 level 4	0.48	0.49	1.04	1.05	1.00
DRG 138 Cardiac arrhythmia and conduction disorders with complications or comorbidities (M)	0.88	0.93	0.91	0.95	0.98
APR-DRG 201 level 1	1.07	1.12	0.92	0.95	1.00
APR-DRG 201 level 2	1.00	1.06	0.92	0.96	1.01
APR-DRG 201 level 3	0.72	0.76	0.93	0.98	1.01
APR-DRG 201 level 4	0.46	0.47	1.03	1.04	1.00

Note: DRG (diagnosis-related group), APR-DRG (all-patient refined diagnosis-related group), S (surgical DRG), M (medical DRG), cath (catheterization), PTCA (percutaneous transluminal coronary angioplasty). Relative profitability compares the national average inpatient Medicare profitability of one patient category (DRG or APR-DRG) with the national average inpatient profitability of all Medicare discharges. The relative profitability measure is an average for each severity-adjusted DRG category, based on cost accounting data. Thus, small differences (for example, 1 percent or 2 percent) in relative profitability among DRGs may not be meaningful. The values shown for the APR-DRG and severity classes associated with any DRG may represent fewer cases than the original DRG if some cases were assigned to other APR-DRGs, or more cases if additional cases were assigned to this APR-DRG from other DRGs. Severity level 1 is least severely ill.

Source: MedPAC analysis of Medicare hospital inpatient claims and cost reports from CMS, fiscal year 2000–2002.

**TABLE  
D-3****National average relative payment-to-cost ratios across and within selected DRGs under different policy options, orthopedic and surgical**

<b>DRG/APR-DRG severity level</b>	<b>Current policy</b>	<b>Hospital-specific relative weights</b>	<b>Plus APR-DRG</b>	<b>Plus cost-based weights</b>	<b>Plus adjusted outlier</b>
DRG 159 Hernia procedure with CC	0.97	1.00	0.97	0.96	0.98
DRG 160 Hernia procedure without CC	0.96	0.98	1.04	1.02	1.07
APR-DRG 227 level 1	1.04	1.06	0.98	0.95	1.00
APR-DRG 227 level 2	1.12	1.15	0.98	0.96	1.00
APR-DRG 227 level 3	0.73	0.76	0.99	0.99	1.00
APR-DRG 227 level 4	0.51	0.51	1.10	1.06	1.01
DRG 210 Hip and femur procedure	0.97	0.97	0.96	0.96	0.99
APR-DRG 308 level 1	1.04	1.06	0.94	0.95	1.00
APR-DRG 308 level 2	1.07	1.08	0.94	0.96	1.00
APR-DRG 308 level 3	0.92	0.92	0.97	0.97	1.00
APR-DRG 308 level 4	0.64	0.63	1.03	1.02	0.99
DRG 290 Thyroid procedure	1.02	1.04	1.01	0.96	0.99
APR-DRG 404 level 1	1.30	1.33	1.04	0.96	1.01
APR-DRG 404 level 2	0.98	1.00	1.02	0.97	1.01
APR-DRG 404 level 3	0.51	0.52	1.03	1.02	1.00
APR-DRG 404 level 4	0.48	0.48	1.11	1.10	1.02
DRG 334 Major male pelvic procedures with CC	0.99	1.01	0.95	0.91	0.93
DRG 335 Major male pelvic procedures without CC	1.00	1.00	1.06	1.01	1.06
APR-DRG 480 level 1	1.03	1.04	0.99	0.94	0.99
APR-DRG 480 level 2	1.01	1.03	1.00	0.96	0.99
APR-DRG 480 level 3	0.69	0.71	1.03	0.99	1.00
APR-DRG 480 level 4	0.52	0.52	1.12	1.08	1.01
DRG 336 Transurethral prostatectomy with CC	0.93	0.98	0.97	0.96	1.00
DRG 337 Transurethral prostatectomy without CC	0.97	0.99	1.04	1.02	1.07
APR-DRG 482 level 1	1.04	1.07	0.98	0.96	1.01
APR-DRG 482 level 2	1.03	1.08	0.97	0.96	1.01
APR-DRG 482 level 3	0.62	0.65	0.97	0.98	1.00
APR-DRG 482 level 4	0.42	0.43	1.09	1.07	1.03

Note: DRG (diagnosis-related group), APR-DRG (all-patient refined diagnosis-related group), CC (complications or comorbidities). Relative profitability compares the national average inpatient Medicare profitability of one patient category (DRG or APR-DRG) with the national average inpatient profitability of all Medicare discharges. The relative profitability measure is an average for each severity-adjusted DRG category, based on cost accounting data. Thus, small differences (for example, 1 percent or 2 percent) in relative profitability among DRGs may not be meaningful. The values shown for the APR-DRG and severity classes associated with any DRG may represent fewer cases than the original DRG if some cases were assigned to other APR-DRGs, or more cases if additional cases were assigned to this APR-DRG from other DRGs. Severity level 1 is least ill.

Source: MedPAC analysis of Medicare hospital inpatient claims and cost reports from CMS, fiscal year 2000–2002.



**TABLE  
D-4****National average relative payment-to-cost ratios across and within selected DRGs under different policy options, medical**

<b>DRG/APR-DRG severity level</b>	<b>Current policy</b>	<b>Hospital-specific relative weights</b>	<b>Plus APR-DRG</b>	<b>Plus cost-based weights</b>	<b>Plus adjusted outlier</b>
DRG 79 Respiratory infections	0.96	0.97	0.99	1.01	1.02
APR-DRG 137 level 1	1.25	1.32	0.90	0.97	1.01
APR-DRG 137 level 2	1.26	1.29	0.93	0.97	1.01
APR-DRG 137 level 3	0.99	1.00	0.97	1.00	1.01
APR-DRG 137 level 4	0.84	0.83	1.03	1.04	1.02
DRG 89 Pneumonia with complications and comorbidities	0.88	0.94	0.94	0.98	1.01
APR-DRG 139 level 1	1.03	1.14	0.90	0.96	1.01
APR-DRG 139 level 2	1.05	1.13	0.92	0.96	1.01
APR-DRG 139 level 3	0.78	0.84	0.94	0.98	1.01
APR-DRG 139 level 4	0.84	0.84	1.02	1.03	1.02
DRG 243 Medical back problems	0.85	0.88	0.88	0.96	1.00
APR-DRG 347 level 1	1.11	1.16	0.85	0.95	1.00
APR-DRG 347 level 2	0.86	0.90	0.87	0.95	1.00
APR-DRG 347 level 3	0.59	0.62	0.90	0.97	0.99
APR-DRG 347 level 4	0.41	0.41	1.02	1.03	0.97
DRG 296 Nutritional and metabolic	0.88	0.92	0.91	0.97	1.00
APR-DRG 422 level 1	1.09	1.15	0.87	0.96	1.01
APR-DRG 422 level 2	1.10	1.15	0.89	0.97	1.01
APR-DRG 422 level 3	0.83	0.86	0.91	0.98	1.01
APR-DRG 422 level 4	0.53	0.54	1.00	1.04	1.01
DRG 316 Renal failure	0.96	0.97	0.98	1.02	1.01
APR-DRG 460 level 1	2.20	2.24	0.92	0.99	1.04
APR-DRG 460 level 2	1.44	1.46	0.92	0.99	1.03
APR-DRG 460 level 3	0.93	0.94	0.96	1.01	1.02
APR-DRG 460 level 4	0.59	0.59	1.06	1.07	1.00

Note: DRG (diagnosis-related group), APR-DRG (all-patient refined diagnosis-related group). Relative profitability compares the national average inpatient Medicare profitability of one patient category (DRG or APR-DRG) with the national average inpatient profitability of all Medicare discharges. The relative profitability measure is an average for each severity-adjusted DRG category, based on cost accounting data. Thus, small differences (for example, 1 percent or 2 percent) in relative profitability among DRGs may not be meaningful. The values shown for the APR-DRG and severity classes associated with any DRG may represent fewer cases than the original DRG if some cases were assigned to other APR-DRGs, or more cases if additional cases were assigned to this APR-DRG from other DRGs. Severity level 1 is least severely ill.

Source: MedPAC analysis of Medicare hospital inpatient claims and cost reports from CMS, fiscal year 2000–2002.



A P P E N D I X E

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**Commissioners' voting  
on recommendations**

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## Commissioners' voting on recommendations

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In the Medicare, Medicaid and SCHIP Benefits Improvement and Protection Act of 2000, the Congress required MedPAC to call for individual Commissioner votes on each recommendation and to document the voting record in its report. The information below satisfies that mandate.

### Recommendation 1

The Secretary should improve payment accuracy in the hospital inpatient prospective payment system by: refining the current DRGs to more fully capture differences in severity of illness among patients, basing the DRG relative weights on the estimated cost of providing care rather than on charges, and basing the weights on the national average of hospitals' relative values in each DRG.

*Yes:* Bertko, Burke, Crosson, DeBusk, DeParle, Durenberger, Hackbarth, Milstein, Muller, Nelson, Raphael, Reischauer, Scanlon, Smith, Stowers, Wolter

*Absent:* Wakefield

### Recommendation 2

The Congress should amend the law to give the Secretary authority to adjust the DRG relative weights to account for differences in the prevalence of high-cost outlier cases.

*Yes:* Bertko, Burke, Crosson, DeBusk, DeParle, Durenberger, Hackbarth, Nelson, Raphael, Reischauer, Scanlon, Smith, Stowers, Wolter

*No:* Muller

*Absent:* Milstein, Wakefield

### Recommendation 3

The Congress and the Secretary should implement the case-mix measurement and outlier policies over a transitional period.

*Yes:* Bertko, Burke, Crosson, DeBusk, DeParle, Durenberger, Hackbarth, Muller, Nelson, Raphael, Reischauer, Scanlon, Smith, Stowers, Wolter

*Absent:* Milstein, Wakefield

### Recommendation 4

The Congress should extend the current moratorium on specialty hospitals until January 1, 2007.

*Yes:* Bertko, Burke, Crosson, DeBusk, DeParle, Durenberger, Hackbarth, Milstein, Muller, Nelson, Raphael, Reischauer, Scanlon, Smith, Stowers, Wolter

*Absent:* Wakefield

### Recommendation 5

The Congress should grant the Secretary the authority to allow gainsharing arrangements between physicians and hospitals and to regulate those arrangements to protect the quality of care and minimize financial incentives that could affect physician referrals.

*Yes:* Bertko, Burke, Crosson, DeBusk, DeParle, Durenberger, Hackbarth, Muller, Nelson, Raphael, Reischauer, Scanlon, Smith, Stowers, Wolter

*Absent:* Milstein, Wakefield



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**More about MedPAC**

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