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# Market Forces, Diversification of Activity, and the Mission of Not-for-Profit Hospitals

Richard G. Frank and David S. Salkever

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## 6.1 Introduction

Bradford Gray, in his introduction to the report *The New Health Care for Profit*, observed that “Our dominant medical institutions—hospitals—have their origins in charity and local government and have long been seen as serving the public interest. Nonprofit hospitals benefited from tax exemptions and had public funds and charitable donations as the primary sources of money for construction. Hospitals were seen by many as serving a distinct ethic. . . . Its obligation to its community is not measured by its net earnings, but by the service it renders . . .” (Gray 1983, 7). Much of the implicit contract reflected in the above passage has changed. Hospitals are less dominant as medical care providers than they once were, as more and more services have been developed outside the hospitals’ walls (e.g., freestanding ambulatory surgery centers, imaging centers). Direct public funds and charitable donations are now far less important for capital projects than is debt financing and retained earnings. The basic mission of not-for-profit hospitals is often unclear to policy makers, consumers, and even donors who question the degree to which “community benefit” is in fact funded by public monies (through tax preferences) or private donations.

The picture is further complicated by new trends that are appearing

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in the medical care marketplace. Not-for-profit community hospitals are increasingly engaging in new activities that have been organized as profit-making operations. Home health care companies, nursing homes, wellness centers, durable medical equipment companies, real estate partnerships, and health clubs are among the for-profit enterprises that are commonly reported by not-for-profit hospitals. Accompanying the expansion of joint ventures and the creation of profit-making subsidiaries are a number of new service offerings aimed at augmenting revenues and retained earnings. These services include satellite clinics, urgent care centers, and industrial medicine centers. It appears that the rate of revenue growth for these new enterprises exceeds the rate of growth of "traditional" hospital revenue sources such as charitable giving and third-party payment for inpatient and outpatient care. The end result is a concern that the necessity of engaging in new revenue-generating activities that are not part of the traditional core services and populations of the hospital may compromise traditional notions of the not-for-profit hospital's mission, such as serving the medically indigent.<sup>1</sup>

In this paper we conduct an initial exploration of the links between some of the new developments in the health care marketplace and the adherence of not-for-profit hospitals to some of their traditional community-oriented services. The paper is organized into four sections. Following this introduction, we review some overall trends in the hospital market. Section 6.3 gives a very brief exposition, at a conceptual level, of some possible connections between diversification and supply of public goods or "community benefit." Section 6.4 is a detailed report on focus groups with hospital executives that explored possible links between not-for-profit status, diversification, and public goods. Finally, section 6.5 makes some observations on what has been learned and proposes direction for further investigation.

## **6.2 Trends in the Market for Hospital Services**

The not-for-profit form remains dominant in the market for hospital services. Table 6.1 presents data from the American Hospital Association (AHA) on the numbers of community hospitals and beds by ownership category. Overall, the total number of community hospital beds has fallen by about 13 percent from the peak in 1985. The number of beds in not-for-profit hospitals has declined about 14 percent since the peak. The result, as indicated in the table, is great stability in the share of beds accounted for by not-for-profit community hospitals at 70 percent over the

1. Recent empirical support for this concern is reported by Young, Desai, and Lucas (1997) who find little evidence of declines in uncompensated care when not-for-profit community hospitals in California were acquired by for-profit corporations. The generalizability of this finding to other states has, however, been questioned (Shactman and Altman 1997).

**Table 6.1** Hospital Statistics

	1970	1980	1985	1990	1995
No. not-for-profit	3,386	3,332	3,349	3,191	3,092
No. beds	592	692	707	657	610
No. for-profit	769	730	805	749	752
No. beds	53	87	104	101	106
No. public (nonfederal)	1,704	1,778	1,578	1,444	1,350
No. beds	204	209	189	169	157
No. combined	5,859	5,840	5,732	5,384	5,194
No. beds	849	988	1,000	927	873
Bed share (community hospitals, %)					
Not-for-profit	70.0	70.0	71.0	71.0	70.0
For-profit	6.2	8.8	10.4	10.9	12.1
Average bed size					
Not-for-profit	175	208	211	206	197
For-profit	69	119	129	135	141

*Source:* 1970 data from AHA (1987); data for 1980, 1985, 1990, and 1995 from AHA (1997).

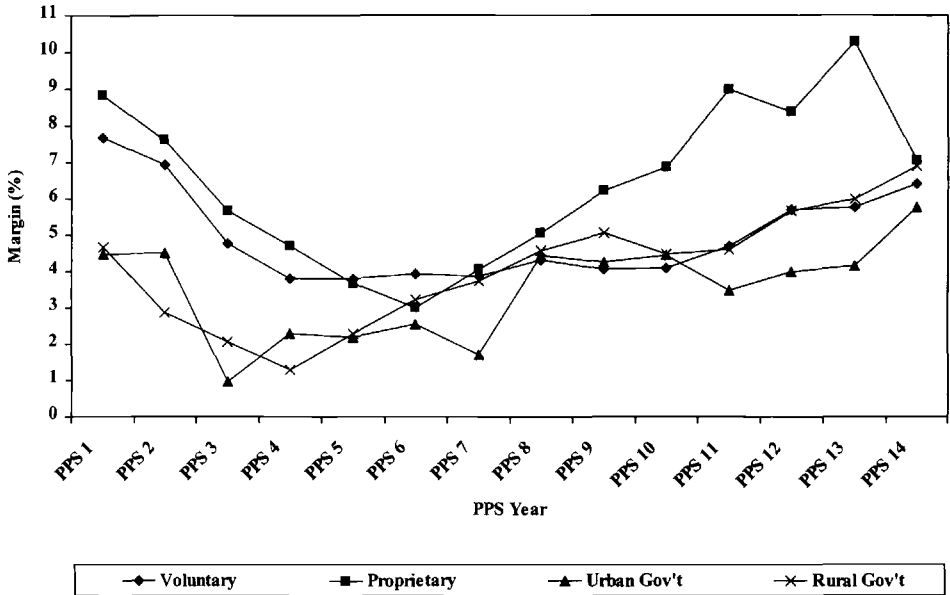
past 25 years. It also suggests that the roughly doubling of the for-profit share of beds (from 6.2 percent to 12.1 percent) came almost entirely at the expense of the share accounted for by publicly owned community hospitals. Table 6.1 also points to the fact that while not-for-profit community hospitals are on average larger than their for-profit counterparts, the difference in size has been narrowing over time. This may be due in part to a convergence in the roles played by the two ownership forms (Sloan 1997).

During the 15 years reported, community hospitals have experienced substantial changes in their treatment patterns and revenues. This has, in part, been driven by changes in payment arrangements, such as Medicare's Prospective Payment System (PPS), more aggressive price negotiations with managed care organizations, and changes in community support. Admissions to community hospitals, overall, have declined by about 22 percent in the period from 1983 to 1995 (AHA 1997). Hospital stays have also declined, falling from an average of seven days in 1983 to slightly less than six days in 1995. Table 6.2 reports the annual average percentage growth in real community hospital revenues. The rate of growth in hospital revenues has dropped notably in real terms since the early 1980s. In 1996, for the first time, there was an actual fall in the level of hospital revenues as indicated by the negative rate of growth. Figure 6.1 shows the total (from all payers) payment-cost margins for various types of hospitals during the 1984–97 time period (PPS 1–14). Several trends are worth noting. The margins for both private for-profit and not-for-profit hospitals were at 8.75 percent and 7.75 percent, respectively, in 1984 and fell substantially during the mid-1980s. Not-for-profit hospital margins fell to about 4 per-

**Table 6.2 Annual Percent Growth in Real Hospital Revenues**

Year	Hospitals	
	Overall	Outpatient
1981	7.5	9.8
1984	2.7	6.2
1988	5.1	6.4
1990	3.8	6.0
1996	-1.0	-0.5

Source: Prospective Payment Assessment Commission (1997).



**Fig. 6.1 Total margins by ownership category, first 14 years of PPS**

Source: MedPac analysis of data from the Health Care Financing Administration.

Note: Data for PPS14 are partial and subject to revision.

cent by the latter part of the 1980s and have remained at a level of 4 to 4.5 percent since. For-profit hospital margins also fell sharply during the mid-1980s but have grown steadily since, returning to a 9 percent level in recent years. Public hospitals entered the PPS period at lower margin levels and experienced major reductions during the 1980s. They have returned to levels of 3 to 4.5 percent in recent years. Thus, while hospitals have generally faced increasingly tight revenues, both for-profit and not-for-profit entities have managed to reduce costs sufficiently to increase margins in recent years.

**Table 6.3** Not-for-Profit Revenue Shares and Philanthropy

	1977	1982	1987	1992
Private contributions (%)	7.8	5.9	5.4	3.6
Private pay (%)	49.1	49.1	51.8	48.3
Government pay (%)	32.4	34.8	36.2	40.7
Other (%)	10.7	10.1	6.6	7.4
Contributions (\$billions)	4.0	6.2	8.1	9.3
Real value of contributions (\$billions)	4.00	3.89	4.33	4.00

Source: Independent Sector (1997).

Not-for-profit hospitals have traditionally relied on revenues from sales as well as revenues from charitable contributions. Researchers have pointed to the shifting roles of different sources of funds. Sloan et al. (1990) show that the reliance of not-for-profit hospitals on philanthropy has declined since the 1960s. They offer evidence suggesting that insurance coverage “crowds out” philanthropy. Frank, Salkever, and Mitchell (1990) provide evidence indicating that donations are negatively associated with hospital profits. Smith, Clement, and Wheeler (1995) estimate a positive association between “returns to the community” and donations to not-for-profit hospitals. One might therefore expect some increases in philanthropy in recent years when there was erosion of both insurance and hospital margins (during the middle part of the 1980s).<sup>2</sup>

Table 6.3 reports information on revenue shares of not-for-profit health care providers (predominantly hospitals) from different payer sources, and the nominal and real levels of philanthropy during the period 1977–92. Two important points emerge from the table. First, the share of revenues accounted for by private contributions to not-for-profit hospitals has continuously declined during the 15-year period observed, from 7.8 percent to 3.6 percent.<sup>3</sup> Second, even though the nominal value of contributions grew from \$4 billion in 1977 to \$9.3 billion in 1992 (a 133 percent increase), the real value of philanthropic contributions remained constant at \$4 billion. Data on contributions to not-for-profit hospitals in California (table 6.4) mirrors this downward trend in the role of philanthropy. For the 174 hospitals reporting data in both 1990 and 1996, the size of contributions relative to gross patient revenues fell from 0.82 percent to 0.52 percent. (The much smaller percentage in the California data relative to the data in table 6.3 probably results from the fact that many contribu-

2. Sloan (1997) acknowledges that insurance has eroded in recent years. He argues that the erosion is quite small compared to the expansion in coverage that took place during the 1960s and 1970s.

3. The Independent Sector data have been criticized as being somewhat inaccurate. Thus, we direct the reader to the gross trend rather than a specific estimate of philanthropy.

**Table 6.4** California Not-for-Profit Hospitals: Summary of Restricted and Unrestricted Donations as a Share of Gross Patient Revenue

	1990	1996
Hospital mean	0.007	0.010
Median	0.0005	0.0004
Percentage > 0	65.52	62.64
Revenue weighted mean (mean donation/ mean gross patient revenue)	0.0082	0.0052

*Note:* Data include only hospitals present as not-for-profit providers in 1990 and 1996;  $N = 174$ .

tions are given to legally separate hospital foundations and, for accounting reasons, are not captured on the state's hospital financial reports.)

These data notwithstanding, some observers of the industry have noted an increased level of fundraising efforts by hospitals and particularly academic health centers (e.g., Ginzberg 1996, 72). There are several factors that might explain why the aggregate donations data do not yet reflect a corresponding increase: (1) lags in data collection, (2) incompleteness of the available data on total donations, and (3) variability among nonprofit hospitals, with increased fundraising efforts by academic health centers and decreased efforts by other hospitals.

In addition to changing the level of fundraising effort, another possible response by hospitals to constrained revenues from traditional sources is to alter the composition of their products and activities toward more profitable lines of business. Sloan (1997) notes that there is limited evidence on this point. Previous research noted that during the mid-1980s a substantial portion of not-for-profit hospitals restructured (34 percent). One common approach to restructuring was to create subsidiaries. Among the central motivations for diversification by creation of subsidiaries is to increase market share and to generate new sources of revenues (Clement, D'Aunno, and Poyzer 1993). The evidence on the consequences of diversification is limited. Shortell, Morrison, and Hughes (1989) found that only about 30 percent of the diversified services offered by eight multihospital systems were profitable. Clement et al. (1993) examined diversification of hospital activities in Virginia in 1987; they found that 62 percent of all the hospitals were engaged in some type of nonhospital subsidiary. The key results regarding the consequences of diversification suggest that older subsidiaries and those that are directly engaged in health care services tended to be the most profitable.

Other suggestive information from a recent study by the General Accounting Office (GAO) and from the American Hospital Association's annual survey points to an emerging trend toward diversification of both

for-profit and not-for-profit hospitals into for-profit joint ventures with various classes of business partners.<sup>4</sup> The GAO (1993) reported significant increases in the number of both not-for-profit and for-profit hospitals entering into joint ventures between 1984 and 1991. The GAO found a doubling of the percentage of not-for-profit hospitals engaged in joint ventures, from 9 to 18 percent. The corresponding change observed in for-profit hospitals was from 14 to 20 percent. Among the most commonly cited joint ventures were primary care clinics, imaging centers, and home health care companies. The GAO also noted that the joint ventures pursued by not-for-profits were less oriented toward serving those that cannot pay for their care than was the not-for-profit parent hospital. For example, 2.8 percent of spending by the joint ventures were devoted to care of the poor compared to 11.4 percent of spending by the parent hospital.

The diversification of activities by not-for-profit hospitals is also reflected by the results of the 1995 American Hospital Association's annual survey. Urban hospitals in particular are engaged in for-profit joint ventures. The AHA reports that 48 percent of urban hospitals are engaged in for-profit joint ventures. In addition, about 25 percent of all not-for-profit hospitals were part of a physician-hospital organization (PHO) and 18.6 percent participated in an independent practice association (IPA).

The trend toward diversification in response to financial pressure raises social concerns primarily because these new activities may divert hospitals from some of their traditional roles and social responsibilities. Students of hospital management have also questioned the wisdom of diversification because of the potential distraction created for management away from the core business of the hospital. Recent evidence on the supply of social goods offers little indication that there have been major shifts in the supply of hospital care to medically indigent populations. Mann et al. (1997) examined trends in uncompensated care based on national surveys for the period 1983–95. In the aggregate, the growth in value of uncompensated care, as reported by Mann et al., has been substantial, expanding by nearly 50 percent in real terms between 1983 and 1995. Since 1993 the rate of growth in uncompensated care has slowed. When viewed relative to either hospital spending or the number of uninsured people, the picture of uncompensated care changes. Hospital spending has grown more rapidly in recent years than has the value of uncompensated care. Uncompensated care accounted for 5.2 percent of hospital spending in 1983, 6.2 percent in 1987, and 6.1 percent in 1995. The value of uncompensated care per uninsured individual ranged from \$401 in 1983, to \$488 in 1988, to \$431 in 1995, indicating that the number of uninsured people grew more quickly

4. Partners include groups of physicians, real estate developers, for-profit health care providers, and private investors.



during the 1990s than did the supply of uncompensated care.<sup>5</sup> The data on the share of uncompensated care provided by for-profit and not-for-profit hospitals show that the not-for-profit share has remained fixed at about 56 percent, while the for-profit share has grown from 4.1 percent to 5.3 percent. This compares to their shares of total spending in 1995 of 73 percent for not-for-profits and 8.2 percent for for-profits.

In summary, the evidence suggests that hospitals have experienced a period of tighter revenues and reduced demand for their traditional inpatient care services. Both not-for-profit and for-profit hospitals have recently experienced growth in their price-cost margins that appears to be explainable by efforts to reduce costs and by hospitals shifting the supply of services in the direction of more profitable services. Both the available statistics and the results of interviews suggest that the shift to more profitable lines of business by not-for-profit hospitals has been accomplished by the development of new products within the traditional hospital structure as well as creation of for-profit subsidiaries and joint ventures with for-profit organizations.

### 6.3 Conceptualizing the Relationship of Diversification to Community Benefit

In this section, we begin by sketching a conceptual model of the not-for-profit hospital that builds on our previous work and that of others (Frank and Salkever 1991; Gruber 1994; Thorpe and Phelps 1991) to characterize the potential issues relating to diversification. We begin with a hospital management objective function defined over net revenue ( $\pi$ ), “public” goods ( $X$ ), and the quantities of two services,  $H$  and  $Z$ , which are defined as “traditional” hospital services and new “diversified” services, respectively. Public goods may include, for example, participation in clinical research, education, or provision of care for the uninsured. We assume that the prices of  $H$  and  $Z$  services are set exogenously. The hospital may also receive revenue from the government as a subsidy for its provision of public goods; let  $r$  denote the exogenous per unit subsidy. The hospital also receives a flow of donations,  $D$ , which is assumed to depend upon the hospital’s mix of services delivered; that is,  $D = D(H, Z, X)$ .<sup>6</sup> Costs incurred are based on the cost function  $C(H, Z, X)$ . Thus, the hospital manager’s problem is

5. The estimates of the number of uninsured people must be interpreted with considerable caution because obtaining an accurate count for person years uninsured is quite difficult given the available data. It should also be noted that Mann et al. (1997) have made an effort to adjust the data based on the most recent methods for estimating the number of uninsured.

6. An alternative but equivalent formulation of the problem would make  $D$  depend explicitly on  $\pi$ . Thus, the above formulation might be most properly viewed as a reduced-form donation supply function.

$$(1) \quad \text{Max}_{H, X, Z} U(\pi, H, X, Z), \text{ subject to}$$

$$(2) \quad \pi = P_H H + P_Z Z + rX + D(H, Z, X) - C(H, Z, X).^7$$

First-order conditions for maximization imply the standard results that provision of  $H$  and  $Z$  should be pushed to the point where their price plus their direct marginal utility (relative to the marginal utility of net revenue) equals their “net” marginal cost, which includes both actual marginal production cost and any marginal impact of provision of  $H$  or  $Z$  on the flow of donations,  $D$ . (We assume that  $U_\pi > 0$  at the optimum.) If the management derives utility directly from provision of  $H$  and  $Z$  (i.e.,  $U_H, U_Z > 0$ ), the optimal supply of  $H$  and  $Z$  will occur at a point where the net marginal cost exceeds price for both services.<sup>8</sup> This implies that an exogenous upward shift in the hospital’s donation supply function will tend to increase  $H$  and  $Z$  if these are “normal” goods to the hospital management.<sup>9</sup> The first-order conditions for optimal choice of  $X$  are similar except that the “price” of  $X$  is the per unit subsidy  $r$ .

The focus of our inquiry in this paper is the implications of diversification for the behavior of the nonprofit hospital in supplying “public” goods. Diversification here means choosing to move  $Z$  from a zero to positive level; increasing the level of  $Z$  could be viewed as increasing diversification. The corresponding comparative statics question would be: How does, say, optimal  $X$  change when  $P_Z$  increases relative to  $P_H$ ? (The increase in  $P_Z$  could be viewed as an exogenous increase in the profit opportunities from diversification.)

How does an increase in  $P_Z$  affect the optimal amount of  $X$ ? As might be expected, an unambiguous direction of effect cannot be determined in general. If one makes the simplifying assumptions that the managerial preference function is additively separable in profit and linear in profit, the sign and magnitude of the effect depends upon (1) the sign (presumably positive) and size of the cross-partials of  $U$  with respect to  $X, H$ , and  $Z$ , and (2) the corresponding cross-partials of the donation supply and

7. The assumption that the hospital chooses  $H, X$ , and  $Z$  implies either perfect competition or price regulation with persistent excess demand. The model could be expanded to allow for choice of nonprice “quality” or “amenity” attributes, with fixed prices, which affect the quantities of  $H, X$ , and  $Z$  that are actually “sold.”

8. Note that the formulation given here yields a similar reduced form to that employed by Sloan et al. (1990). The models are slightly different in that we allow for multiple outputs and we do not explicitly incorporate solicitation effort. The reduced forms are similar, however, in that the hospital is viewed as choosing its “policy variables” (in our case  $H, X$ , and  $Z$ ) taking account of the implications for this choice on donor supply.

9. It may be helpful to conceive of this formulation as a single-period condensed function of a multiperiod model in which hospitals need to accumulate capital in the present period to invest and expand the supply of  $H$  and  $Z$  in future periods. From that perspective, the increase in donations in the current period would be used in part to fund investment in subsequent periods and thereby expand  $H$  and/or  $Z$ .

cost function. If the latter are all zero, an increase in  $P_Z$  results in a decline in the supply of  $X$ .

While the implications of nonzero cross-partials for the donation supply and cost function are complex and interrelated, we offer several hypotheses about the signs of these cross-partials. These hypotheses are informally tested against anecdotal evidence from the focus groups below.

With respect to cross-partials and second partials in the cost function, we expect that all marginal costs tend to increase beyond some point as total output of  $H$ ,  $X$ , and  $Z$  expands. We further propose that economies of scope may exist between  $H$  and  $X$ . For example, a hospital that treats more patients is better able to produce clinical research because it has more patients as potential research subjects. Similarly, a hospital that treats a larger number of paying patients can presumably supply any given volume of charity care to uninsured persons at lower cost because the problem of finding and triaging these uninsured persons is less costly when the total patient flow is larger.

With regard to the cross-partials of the donation-supply function, we expect that  $Z$  will tend to reduce the marginal donation revenue from an additional unit of  $X$ . In other words, increasing diversification will tend to reduce the supply response of donors to provision of public goods. The fact that the hospital is in many lines of business increases the uncertainty among donors that contributions will in fact go to support the public goods ( $X$ ) that they wish to subsidize. The fact that the hospital is treating paying patients ( $H$ ) will create this uncertainty, but if  $H$  is viewed by donors as complementary in production to  $X$ , their donation to the hospital is likely to result in an increased supply of  $X$  even if some of it is also used to expand the volume of  $H$ . In contrast, if some donation funds are channeled to increased production of  $Z$ , and economies of scope do not exist between  $Z$  and  $X$ , the hospital's increased production of  $Z$  will create uncertainty on the part of donors that their donations will in fact be used to increase the volume of  $X$  supplied in the future.<sup>10</sup> This can be depicted as a general downward shift in the donation supply function and as a downward shift in the marginal donation revenue from increasing the supply of  $X$ .

#### 6.4 Mission and Diversification: Findings from the Focus Groups

Three focus groups were conducted during October 1997, one in Boston and two in Chicago. Hospitals invited to participate were midsize (150–400 beds) not-for-profit community hospitals. Major academic medical centers were not invited. The 14 participating hospitals generally fit this

10. The notion that uncertainty about the ultimate use of funds diminishes donation supply has been recently advanced and explored in a general context by Bilodeau and Slivinski (1996).

profile, with three exceptions. Representatives from a not-for-profit rehabilitation hospital, an academic medical center, and a for-profit community hospital were included in the focus groups. Each participant filled out a brief survey prior to the meeting of the focus group that elicited information on the participants (title, years of experience, and percent of time spent on planning issues) and the hospitals (name, bed size, statement of mission, and who is responsible for preserving the mission of the hospital) (see the appendix). Two of the three groups consisted of three participants and the third included eight individuals.<sup>11</sup> A professional moderator led each focus group discussion and followed a relatively broad outline (see the appendix) supplemented by specific examples and probes to be used to advance the discussion.<sup>12</sup> Below we report on the major points made by participants that were broadly held.

The purpose of the focus group discussions was to elicit views of hospital executives on four main topics: (1) the hospital's objective function (i.e., mission), (2) the role of philanthropy and fund raising in hospital financing, (3) the causes of the trend toward diversification, and (4) how hospitals are altering their service mix in response to the changing payment system.

#### 6.4.1 Diversification

All participating hospitals were engaged in at least one or two joint ventures. The hospital executives pointed to two types of activities that might be viewed in terms of diversification. One approach related to the development of new products within the confines of the traditional hospital organization (that is, without joint venture partners or subsidiaries). These included occupational medicine clinics, urgent care centers, and wellness clinics. In some cases, wholly owned for-profit subsidiaries were created; for example, one hospital entered the nursing home business through a wholly owned subsidiary. Home health programs and durable medical equipment companies were also organized in this way. Another approach to diversification involved joint ventures and creation of jointly owned for-profit subsidiaries. Commonly mentioned joint-venture enterprises were primary care clinics, medical office buildings, surgi-centers, imaging centers, and health clubs. Most indicated that the diversified activities were profitable. The nursing homes, home health care companies, and medical office buildings were most often pointed to as successful profit-making enterprises.

11. One group began with four participants but was reduced to three because of concerns that the individual had not received clearance from the hospital CEO to discuss the issues that were proposed.

12. Videotapes, audio tapes, and transcripts of the three focus groups were provided the authors and are available for review subject to the confidentiality rules established with the participants.

#### 6.4.2 Not-for-Profit Hospital Objectives

Several themes emerged in the discussion regarding the mission of not-for-profit community hospitals and how it might differ from the mission of for-profit hospitals. In the general statements of mission by the participating hospitals, all refer to provision of high-quality, low-cost health care to the community. They also claim the promotion of health in the community to be a goal of the organization and a relatively new aspect of mission. The basis for pursuing this goal appears to lie in (1) an expanded view of health and health care among both professionals and the general public, and (2) an approach to marketing that establishes the hospital's identity as the place to go for health care. It was especially notable that the only for-profit hospital represented in the group was very active in prevention/screening programs and other outreach activities involving mobile vans. The representative of the for-profit stated the following: "With prevention . . . really . . . you're looking for market share, whether you charge or do it free . . . you want people to think of you when they think of health care." All of the participants were in basic agreement with this assessment. The literature has generally viewed the provision of health promotion as being a social good, but its supply also appears to be consistent with profit maximization.

The importance of strong financial performance was noted repeatedly by the participants. The increasing emphasis on financial performance, in the face of competitive pressures and constraints from payers, was viewed as affecting the priority placed on other aspects of the hospital's mission. As a further indication of the strength of competitive uncertainties, most of the participants characterized their institutions as exposed to substantial longer term risk.

The participants acknowledged the role of the hospital as a charitable institution. Some noted the role of the hospital as the "provider of last resort"; others pointed to a duty to attend to underserved populations. It was nevertheless striking that treating the underserved or the medically indigent was generally not mentioned in the basic statement of mission nor as a major concern of most of the participants. In fact, there was substantial agreement that a hospital's commitment to serving the poor and uninsured is largely a consequence of location decisions taken decades earlier.

In summary, while the objective function proposed in section 6.3 is broadly consistent with the discussion in the focus groups, we view much of the discussion as implying a large weight on current and future profits in the face of perceived financial and competitive risks.

### 6.4.3 The Role of Philanthropy

The aggregate national data from the early 1990s reported earlier suggests that 3.6 percent of revenues were philanthropic contributions. Several participants in the focus groups estimated their philanthropic contributions to be approximately 1 percent of revenues. The academic medical center and one hospital located in a very affluent suburb reported that they received substantial levels of philanthropy but noted that they were likely to be exceptional. In general, fund raising was either a small activity or was part of a larger effort aimed at marketing services to the community and public relations. Several participants noted that this was a very substantial change from earlier years, when much of the capital for the original building or new construction came from philanthropy. They generally agreed that philanthropy could serve to provide “add-ons” that might be valued by patients or families but could not be paid for directly through insurance funds. One specific example was overnight accommodations in the hospital for parents whose children were inpatients. These “add-ons” were seen as valued by the community, but they could also be viewed (a view not explicitly expressed by the participants) as enhancing market share.

The discussion of fund raising yielded a number of important impressions regarding the link between hospital financial performance and donations (which is tied to the cross-partial of  $X$  and  $Z$  in the donation supply function described earlier). The observations made suggest that there are two specific indicators of financial performance that tend to affect donations: overall hospital margins and investment income. Members of a hospital’s board of trustees in particular are aware of the financial performance of the hospital and typically have a variety of competing demands for their financial support. Thus, in years where hospitals have strong financial performances (large or growing margins and significant investment income), board members tend to offer less financial support. Similarly, the larger community is less well informed, but its donations still appear to be sensitive to the financial performance of the hospital. A number of participants also pointed to a general public perception that hospitals are somewhat “bloated” organizations and are therefore less deserving of financial support. The construction of large office buildings and the continued rise of hospital prices serve to reinforce this general perception. The end result is that donations play a very small role in hospital strategic decision making, and a larger share of donations now have restrictions placed on their use than was once the case.<sup>13</sup>

13. The reduction in flexibility is in part due to donors’ concerns about the use of their contributions (the agency problem) and because fund raising appears to focus more on specific projects than may have once been the case.

#### 6.4.4 Explaining Diversification/Joint Venture

One simple explanation for diversification, noted earlier, is that increased financial pressure leads hospitals to seek new sources of revenues and funds. That observation would explain a desire by hospitals to seek new “products” but not necessarily to choose for-profit subsidiaries or joint ventures as the means for attracting the new revenues. The discussion in the focus groups pointed to another important explanation for a number of the joint ventures and subsidiary activities of not-for-profit hospitals. The explanation is summarized here.

Most hospital markets in the nation are characterized by excess capacity and relatively high levels of competition. Thus, retaining and expanding market share has gained an increasingly central place in hospital strategic planning since the risk of rapid declines in market share are much clearer than in the past. Competition stems primarily from other not-for-profit hospitals but also from for-profit hospitals and more specialized health care providers (niche players). This latter group might include free-standing clinics, surgi-centers, and urgent care centers. At the same time, traditional relationships with office-based physicians have been altered. Physicians, who typically have admitting privileges at several hospitals, have become more aggressive in negotiating terms for their appointments with hospitals. This is in part due to new constraints on physician earnings as well as the advent of for-profit physician management companies that are well informed and experienced in negotiation with hospitals. The result is that the demand for hospital services is becoming less predictable.

Hospitals can potentially gain market share and reduce the uncertainty in demand by pursuing strategies that (1) offer new products directly to consumers and (2) make their relationships with office-based physicians more exclusive. Sloan (1997) also notes that “product” innovations are important means for hospitals to expand into more-profitable services. He cites examples of hospitals adopting new technologies, including cardiac catheterization programs, inpatient mental health units following implementation of PPS, and expansion of rehabilitation units in more recent years. Participants in the focus groups identified wellness programs, primary care clinics, and urgent care centers as examples of new services that are profitable. The primary care clinics were pointed to as being particularly important. This was because, in these subsidiaries, the physicians are often employees of the clinic. Thus, the hospital begins to develop a direct relationship with an organization that will steer patients in its direction. It was noted that some hospitals make an effort not to publicly link the clinic and the hospital, thereby reinforcing the impression of patients that one’s “doctor just refers most of his/her cases to one hospital.” In this manner, the hospital reduces its dependence on private, office-based attending physicians.

Joint ventures offer some similar advantages in terms of generating new streams of revenues and stabilizing demand. A number of for-profit joint ventures involve enterprises such as primary care clinics, home health companies, health and fitness clubs, and physician office buildings where partners in the joint ventures are physicians.<sup>14</sup> By creating a for-profit joint venture that can pay partners (shareholders) a portion of the net revenues and is backed by hospital assets and access to capital, the hospital strengthens its ties with physicians, thereby strengthening incentives for physicians to want the hospital to prosper. These types of arrangements are an incomplete form of vertical integration.<sup>15</sup> Several participants cited the desire to develop greater physician loyalty and more exclusive relations with physicians as being important factors in choosing to enter into certain types of joint ventures. Several also had involvement in physician-hospital organizations, a strategy for alliance building between hospitals and staff physicians that may be particularly important for community hospitals in the coming years (Ginzberg 1996).

#### 6.4.5 Reduction and Elimination of Services

In addition to looking for new opportunities to earn surpluses, hospitals also evaluate whether various traditional service operations need to be continued. All participants described strategic review of services. Some of the participating hospitals had eliminated obstetrics services, outsourced pathology services, or had changed the organization and management of the emergency department. Generally, they identified a set of conditions that led to elimination of services. They were: (1) the service was a money loser, (2) there were similar services available from nearby competitors, and (3) it was not considered fundamental to the hospital. We probed the focus group participants regarding whether emergency services might be eliminated if they lost money. All of the hospital representatives stated that they viewed the emergency department as a core feature of the hospital and therefore would not eliminate it under any conceivable circumstances. Several participants noted that they had changed the manner in which the emergency department operated. Specifically, one hospital jointly staffed the emergency department with an urgent care outpatient clinic that met the pricing standards for most HMOs. The effect was to reduce the role of the emergency department and presumably to offer more appropriate levels of care to patients.

The discussions with the representatives of not-for-profit hospitals participating in our focus group did not suggest that joint ventures and creation of subsidiaries were motivated primarily by seeking flexible revenues

14. The focus group discussions revealed that there were no meaningful joint ventures outside of the health arena.

15. It is interesting to note that these practices are quite similar to those that have created such intense scrutiny of Columbia/HCA and its relationship to physicians.



that could be used to maintain or expand charitable activities directed to care of the medically indigent. Nor did any participant identify the provision of uncompensated care in pursuit of serving the community as a source of financial stress on their hospitals. Discretionary funds appear to be primarily directed toward new product development, joint ventures, and investment in financial markets. Thus, beyond adding to the general financial health of the hospitals, returns from profit-making activities do not seem to be targeted specifically to increased supply of social goods.

## 6.5 Conclusions

It is logical to expect that the emergence of price competition in the market for hospital services will threaten the traditional funding of charity care and other public goods by not-for-profit hospitals through cross-subsidies. This expectation is also supported by research that links increases in competitive pressures to declines in the supply of uncompensated care. It is also logical to expect this trend to increase the importance of philanthropy as a source of support for supplying these public goods and to conclude that a reversal of the secular decline in philanthropic support will be needed to avoid a sharp reduction in the supply of public goods.

Against this background, we have examined the trend of hospitals to diversify into new lines of business. Our particular focus was on the notion that diversification could reduce the supply of public goods by either (1) adversely affecting the supply of philanthropy, or (2) increasing the cost of public goods via diseconomies of scope.

In our view, the focus group evidence reported here provides little support for the idea that diversification adversely affects the supply of public goods. They appear not to consider it at all in strategic diversification decisions. There is recognition that high profit margins may impact negatively on the supply of philanthropy, but diversification per se is not seen as a factor in philanthropy supply. (A minor qualification might be added for the preference of some hospitals to not use their own name on joint venture projects, but clearly this was mainly motivated by a reluctance to appear as infringing on the clinical independence of physician-partners.) Information from the focus groups was less clear on the question of diseconomies of scope and the effect of diversification on the incremental cost of public goods supply. Finally, offsetting any of these possible negative effects was the clear consensus that diversification efforts were profitable. Some discounting of this evidence may be in order because of the selected nature of our informants and their own personal involvement in diversification efforts, but their message seemed very clear. Diversification was a new source of profits that maintained the financial health of the hospital, including its ability to supply public goods.

These observations are also consistent with national trend data cited earlier. In the face of budgetary restraints from Medicare and Medicaid and the presumed rise in price competition in the private sector, hospital profit margins have not been shrinking and, in fact, have recently been rising. While we do not have information on operating margins for “traditional” lines of hospital business versus margins on joint ventures, some of the recent increase in hospital margins is presumably due to joint venture profits. In addition, it appears that margins on private sector patient care increased during the 1990s and have only recently started to decline but still remain strongly positive (Guterman, Ashby, and Greene 1996). Thus, our presumption that private sector margins are shrinking due to increased price competition may be at least premature if not incorrect. Managed care certainly appears to have an affect on the level of utilization and the rate of increase of total and unit revenues for hospital services, but hospitals’ responses in containing costs have thus far been more than sufficient to maintain healthy profit levels on “traditional” lines of business.

In short, the initial presumption of our work—that the supply of public goods was being threatened by the disappearance of cross-subsidies—needs to be modified. The flow of profits that are the source of the cross-subsidies has not dried up. Accordingly, even though the role of philanthropy continues to diminish, the supply of some public goods (e.g., charity care) has not declined nationally. Additional funding sources have arisen, such as statewide indigent care pools, but profits continue to be an important funding source.

The short-run success of not-for-profit hospitals in maintaining their profit margins is, however, no guarantee of future survival under present circumstances. In the presence of substantial excess capacity, hospitals are financially vulnerable to price pressures, especially in the inpatient market (Ginzberg 1996); concerns for survival may dominate, and diversification decisions may be largely driven by these survival concerns. The motivation for diversification in the form of joint ventures with physicians appears to be greater forward integration with the physician practices that are an important component of the increasingly uncertain demand for “traditional” hospital services. Preserving the supply of such specific social goods as care for the indigent is a secondary factor in this consideration.

## Appendix

### BACKGROUND INFORMATION

Greenleaf Associates, Inc.

October, 1997

Name: \_\_\_\_\_ Hospital: \_\_\_\_\_

Title: \_\_\_\_\_ Years in Current Position: \_\_\_\_\_

Previous position held, if any, in same hospital: \_\_\_\_\_

1. What do you feel is the most critical strategic planning issue currently facing your hospital? (*Please describe.*)

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2. About what percent of your professional time is spent on strategic planning issues for your hospital?  
(*Write in %*) \_\_\_\_\_

3. What members of the hospital community are most influential in strategic planning decisions? (*Please describe role/title; do not include names.*)

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4. How would you define the "mission" of your hospital? (*Please describe.*)

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5. Who do you feel are the people most invested in preserving this "mission"? (*Please describe.*)

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## DISCUSSION GUIDE OUTLINE

*Strategic Planning for Not-for-Profit Hospitals*

Monday, October 20, 1997 (*Boston: 7:00 PM*)

Tuesday, October 28, 1997 (*Chicago: 6:30 PM*)

- I. Introduction
  - A. Procedures
  - B. Participant introductions
- II. Background Information
  - A. Mission of Not-for-Profit Hospitals
    - 1. Definitions of mission, of community
    - 2. Importance of "mission"
      - Probe: Perceptions from community, from donors, from medical staff
    - 3. Present commitment to mission: the entrenched vs. the drifting
  - B. Mission "Gatekeepers"
    - 1. Principal gatekeepers and evolution of their roles
    - 2. Role of board
    - 3. Existence and membership of a Mission Affairs Committee
      - Probe, as appropriate: Evolution of a committee's role
      - Probe: Involvement, if any, in committee's balance of commercial and mission activities
  - C. Pressures Affecting Pursuit of the Hospital's Mission
    - 1. Principal pressures and degrees/area of influence
      - (*Easel summary of spontaneous mentions prior to moderator's probes*)
    - 2. Pressures from the "competition"
      - Probe: Perceived need and ability to "compete"
      - Probe: Descriptors of the principal "competition"
      - Probe: Extent to which competing is bolstered versus hindered by commitment to mission
    - 3. Financial pressures
      - Probe: To what extent, in what areas
    - 4. Pressures from the community
    - 5. Pressures from the medical staff
- III. Strategic Planning
  - A. Perceived Impact of Pressures on Not-for-Profit Hospitals
    - 1. Areas most influenced and reasons why
      - Probe: extent to which new directions/strategies embrace/conflict with mission
      - Probe, as appropriate: Degree of departmental integration (e.g., financial, medical education, etc.), if any, drawn upon to accomplish new direction/strategy

*(Easel summary of spontaneous mentions prior to moderator's probes. Areas probed will include brief discussion of current involvement as well as anticipated future involvement)*

2. Effect on fund raising efforts  
Probe: Motivating criteria for key donors and perceived points of conflict, if any  
Probe: Changes, if any, to volume and restricted/unrestricted donations and reasons why
  3. Effect on involvement with profit-making activities (e.g., imaging centers, wellness and/or fitness centers, sleep centers)  
Probe: Effect of diversification into "high margin", non-traditional activities on "organizational" culture (to include process/cost/size/complexity of management)
  4. Effect on involvement with subsidiaries/joint ventures (e.g., home health areas, MD partnerships, insurance) and/or mergers
  5. Effect on staffing (e.g., quality of staffing, morale)
  6. Effect on quality of care issues
  - B. Key Dilemmas Facing Not-for-Profit Hospitals
    1. Prioritization of principal issues: current and near future  
Probe: Relationship of key issues to mission
  - C. Key Influencers in Process of Strategic Planning
    1. Relationship of strategic planners and mission gatekeepers
  - D. Role of Marketing
    1. Strategic planning role/influence
    2. Changes, if any, in marketing emphasis and/or direction  
Probe: Introduction, growth, and role of marketing department
    3. Range of services marketed  
Probe: Services with the most impact (e.g., on needs of community, of hospital) and reasons why
  - E. Principal Strategic Planning Considerations
- IV. Closing Remarks
- A. Confidentiality Emphasized
  - B. Words of Appreciation

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**Comment on Chapters 5 and 6**    Bradford H. Gray

As a sociologist who has worked for many years on the question of ownership form in health care, I have found the papers and discussion at this conference to be enormously interesting and stimulating. Like the conference itself, the papers I've been asked to discuss have a strong interdisciplinary flavor—Frank and Salkever's paper because they use the focus group methodology that comes out of sociology (Merton and Kendall 1946), and Skinner and Wennberg's because it is a collaboration between an economist and an epidemiologist.

Theoretical work in both sociology and economics suggests why ownership form might or might not make a difference in the performance of organizations. In sociology, DiMaggio and Powell (1983) suggested that organizations in the same field will tend to look similar to each other because of coercive, imitative, and normative pressures toward isomorphism. That is, all organizations are subject to the same regulatory and market pressures, all notice each other and copy what seems to work, and all are subject to social expectations. In health care, an important source of normative pressure comes from the professional values of physicians to which hospitals, for example, must pay attention. It should be noted, however, that coercive and normative pressures are not identical for for-profits and not-for-profits in health care. Not-for-profits' tax exemptions as charitable organizations and their ability to obtain donated funds may create both resources and external expectations of charitable behavior and the provision of public goods, even though, as Frank and Salkever note, charitable contributions are now a very small part of the financial picture for most hospitals.

Economics—particularly in agency theory—has also suggested reasons why ownership form may have little effect on organizational behavior. But economic theory regarding property rights, public goods, and contract failure has also given us reasons to expect differences in behavior (Hansmann 1987). One implication of these ideas is that for-profit organizations might be more prone to exploit the informational asymmetries that typify health care—asymmetries that involve not only patients but also third-party payers (Steinberg and Gray 1993).

These various concepts do a pretty good job of accounting for the broad patterns that have been observed in the behavior of for-profits and not-for-profits in health care (see Gray 1991 for a summary). To broadly generalize across studies, there are similar costs in hospitals although for-profits charge higher prices. There are similar levels of uncompensated care where need is low, but different levels and different geographic patterns of owner-

ship where the need is high. There are large sectoral differences in organizational involvement in educational and research activities, which contain an element of public good. There are similar levels of quality in hospitals (where normative pressures from physicians are strong), but there are differences in nursing homes (Marmor, Schlesinger, and Smithey 1987) and, perhaps, in HMOs (Gray 1997).

It is good that Frank and Salkever went beyond formulating a problem and positing the way they thought the world works to the collection of primary data and the modification of their initial presumptions on the basis of it. This particular set of focus groups, however, does not provide a strong basis for sweeping conclusions because of the small numbers, inclusion of some unintended hospital types, and limitation to two cities. Even with these limitations, Frank and Salkever found that the world is more complicated than they had expected, and they shared what they learned in an informative way.

Economists sometimes seem to presume that ownership form is an epiphenomenon and to expect, often implicitly, that behavior of not-for-profits and for-profits is essentially the same. Although Frank and Salkever's model does not assume that the objective function of not-for-profit hospitals is profit maximization, they still have their suspicions. Even after reporting that the not-for-profit hospital executives in the focus groups all said they would not eliminate their hospital's emergency room under "any conceivable circumstances," Frank and Salkever still concluded in their original version of their paper that "profit maximization may be a reasonable approximation of not-for-profit objectives." This formulation was changed in the final version of the paper to read that not-for-profit hospitals place "a large weight on current and future profits in the face of perceived financial and competitive risks" (section 6.4.2). Although their original formulation is a better illustration of how our disciplinary background shapes our perceptions (a phenomenon not peculiar to economists), even their second formulation goes beyond the evidence, I think.

As I read their evidence, not-for-profit hospitals engage in diversification activities in an attempt to allow themselves to continue to do what they have been doing. But they do not all define this identically. Frank and Salkever's surmise that diversification—and profits resulting therefrom—may help explain why hospitals have been able to maintain (or build) *both* their profit margins and their uncompensated care load in the face of an increasingly competitive health care system is plausible to me. The fact that the focus groups provided little evidence that enhanced charity or public goods was their goal is worth reporting, to be sure, and this points to an important issue regarding our expectations of not-for-profit hospitals. As the respondents suggested, a hospital's role in providing charity care may have been heavily influenced by decisions made decades earlier under different circumstances regarding where the hospital would be lo-



cated. After all, not-for-profit hospitals vary with regard to their proximity to large numbers of poor and uninsured people, a fact that may relate to variations in their conceptions of their missions. Not-for-profits are not a homogeneous lot, a point that Weisbrod (1988) emphasizes in his analysis of the role of not-for-profits. They have considerable latitude in meeting community needs, as their trustees define them. Since neither the hospitals nor their administrators are a uniform lot, those who were selected to participate in a small number of focus groups are not necessarily representative. Overgeneralization is a danger.

The importance of not-for-profit hospitals' self-definitions of mission has received public policy support. In 1969, the Internal Revenue Service changed its interpretation of the meaning of "charitable" for purposes of hospital tax exemptions from a definition that emphasized service to the poor to a definition, thought to be more realistic, that emphasized service to the community at large—the so-called "community benefit" standard (Fox and Schaffer 1991). As trustee-governed institutions, hospitals define their missions for themselves, and as Frank and Salkever found, they do not necessarily do this in terms of service to the poor. Thus, there is little reason to expect that most hospitals' diversification efforts would be undertaken to support service to the poor. Nor does service to the poor necessarily lie behind the intentions of donors to hospitals—particularly large donors who contribute to capital projects. If, as has happened in a few states, not-for-profit hospitals come under increased pressure to demonstrate that their charitable or community benefit activities are commensurate with the value of their tax exemptions, fund raising and diversification activities may become more focused on generating revenues to support the activities that justify the tax exemption (Pauly 1996). Frank and Salkever's finding that this purpose receives little mention now is interesting in light of the fact that Massachusetts is one of the states that has begun to demand greater accountability regarding tax-exempt status.

As a final comment on Frank and Salkever's paper, I would note that diversification is not new among hospitals, even if it has increased in recent years. The phenomenon was attracting much attention when I first became involved in the for-profit/not-for-profit topic 15 years ago. Several points were then being made, including how common diversification was and how often it was connected with corporate restructuring, which itself was driven in part by the goal of generating revenues to support the hospital's activity. The creation of separate organizational structures was then—and I suspect is now—driven in part by tax rules and the need to separate out revenue streams that were subject to the unrelated business income tax. The fact that Frank and Salkever's respondents did not mention tax-related reasons for diversification suggests that the nature of the phenomenon has changed from the earlier period.

Turning to the Skinner and Wennberg paper, I will not repeat the pat-

tern of findings that they have woven together to reach their conclusions, which I find convincing. They point us to a fundamental challenge in assessing the effects of a profit-maximizing orientation in health care, as well as the difficulty in measuring the efficiency of health services. These difficulties both result from our old friend—the information asymmetry problem. But the findings may also be due to differences in physician preferences regarding how to respond to given sets of clinical circumstances.

As with many earlier studies by Wennberg and his colleagues, Skinner and Wennberg find evidence that the volume of services in an area is directly related to the supply of physicians and appears unrelated to underlying medical needs in the population (although perhaps not unrelated to patients' preferences). An interesting aspect of this is their evidence that the extra services received by the Miami patients are not only costly but that they may actually detract from patients' well-being. This is extraordinarily important in this period in which managed care plans are being criticized for policies that result in reduced hospital usage.

Also important is their evidence that there are high-utilizing *places*. Skinner and Wennberg show that Miami has much higher use of *many* services than does Minneapolis—hospitals, ICUs, primary care visits, and, especially, specialist visits. What is it about a place like Miami that accounts for such patterns? The fact that some surgical procedures occurred at a higher rate in Minneapolis should warn us against simple explanations. Processes involving selection and patient preferences may be going on. However, the inclusion of this paper in this conference on for-profit and not-for-profit care suggests that the authors and conference organizers saw it as relevant to that topic. This view has considerable plausibility.

Why might Miami be a high-utilizing place? One way that Miami differs from Minneapolis is its very large Medicare population that attracts all kinds of profit-seeking organizations. About half of Florida hospitals are for-profit, and about half of those are owned by Columbia/HCA. This company, of course, has been charged with a wide variety of manipulations of payment systems, and it used a much-criticized strategy of joint ventures with physicians to encourage their use of Columbia/HCA hospitals in ways that would enhance their profitability (Kuttner 1996). One possible result would be elevated admission rates.

Fraud appears to be a major problem in Florida. In a presentation about Florida health care at the annual meeting of the American College of Medical Quality in Orlando in November 1997, James T. Howell, M.D., the secretary of the Florida Department of Health, described two recent interventions aimed at reducing fraudulent care in Florida. The first, undertaken because home care costs were wildly out of control, was to require that home care organizations reapply for certification. It was made known that there would be fingerprinting and background checks of owners. Of

the existing 1,600 certified agencies, 1,200 did not reapply. Dr. Howell also described how new practice guidelines involving less-invasive care were implemented for low back pain in Florida's workers' compensation program; a 62 percent reduction in costs occurred in the first year. His conclusion was that cost containment is hopeless in a fee-for-service system.

Interestingly, the high rates of service utilization in Florida have made the state attractive for Medicare HMOs, since Medicare payment rates for HMOs are heavily influenced by costs within the fee-for-service system. (The 1997 average annual per capita cost (AAPCC) on which Medicare HMO costs are based was \$748 per month in Dade county compared to \$406 in Hennipin county.) Twelve of fifteen HMOs in Miami are for-profit. The largest most notorious case of HMO fraud in the Medicare program—the International Medical Centers scandal—occurred there a decade ago (see Gray 1991, chap. 6, for an account).

If Miami is indeed a place in which entrepreneurial providers have been actively exploiting the vulnerabilities of payment systems, an interesting question arises. What will be the effect of managed care and associated strategies in a situation in which most of the HMOs are themselves for-profit and most of the physicians that they attract are strongly responsive to economic incentives? It would be very interesting to see the results of a Skinner and Wennberg analysis comparing HMO enrollees and nonenrollees in the two cities. In Minneapolis, with its high HMO penetration, all health plans are not-for-profits as a result of state law; in Miami, the for-profits overwhelmingly dominate. (Interstudy reports HMO penetration rates of 44 percent in Minneapolis and 52 percent in Miami.) Economists have long noted that the health care market is influenced in important ways by the fact that the customers—the patients—do not know their own needs and must rely on the advice of others (Arrow 1963). Managed care does not eliminate the vulnerability of patients, and it introduces new ways that those vulnerabilities can be exploited by those who are inclined to do so (Gray 1997). The study of patterns of services across geographic areas and delivery systems can provide important clues regarding when that might be happening.

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## Comment on Chapters 5 and 6      Frank Lichtenberg

The fact that hospitals have experienced a period of tighter revenues and reduced demand for their traditional inpatient care services has raised concerns about their ability to provide traditional community-oriented services, such as hospital care to medically indigent populations. But the main conclusion of Richard Frank and David Salkever's interesting paper is that neither increased price competition nor diversification of hospitals into new activities necessarily threatens the supply of public goods.

Due to the hospital's budget constraint, the supply of "public goods" is limited by its net income

$$N = \pi + D = (R - C) + D,$$

where  $N$  = net income,  $R$  = revenue from traditional inpatient care services,  $C$  = cost of traditional inpatient care services,  $\pi$  = profit from traditional inpatient care services, and  $D$  = donations (charitable contributions). The "naive" hypothesis is that  $dN/dR = 1$ : A \$1 reduction in traditional revenue results in a \$1 reduction in net income available to support public good provision. However, Frank and Salkever's analysis and evidence suggests that this view is too pessimistic:  $dN/dR$  is much less

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than one (and may even be negative!), because both  $C$  and  $D$  do not remain constant when  $R$  changes. I would paraphrase their analysis as follows:

$$\begin{aligned} C &= \theta R & (\theta > 0), \\ D &= -\gamma\pi & (\gamma > 0). \end{aligned}$$

The first equation embodies the notion that hospitals may operate with some degree of *X-inefficiency*,<sup>1</sup> and that they will reduce costs and inefficiency when revenues are declining. Hence, profits will not fall as much as revenue. Between 1985 and 1995, the number of not-for-profit hospitals declined from 3,349 to 3,092, and the number of beds declined from 707,000 to 610,000.<sup>2</sup> Presumably, the hospitals that closed had higher costs than those that remained open, so that this reduction of capacity contributed to cost reduction.

The second equation embodies the idea that the supply of charitable contributions is inversely related to profits: Donors are less inclined to contribute when the hospital is earning large profits. Hence, net income will not fall as much as profits. Substituting these two equations into the net income identity,

$$N = \pi - \gamma\pi = R(1 - \theta)(1 - \gamma).$$

Hence  $dN/dR = (1 - \theta)(1 - \gamma)$ , which is certainly less than one. At times Frank and Salkever seem to suggest that the cost-reduction efforts triggered by declining revenue were so intense and effective that the net effect has been an increase in profits: "While hospitals have generally faced increasingly tight revenues, both for-profit and not-for-profit entities have managed to reduce costs sufficiently to increase margins in recent years" (section 6.2). In other words,  $\theta > 1$ , so that  $d\pi/dR = (1 - \theta) < 0$ . Hospitals should have wished for a decline in revenues years ago! It is plausible to me that revenue decreases stimulate some cost reductions, but not that the latter are more than adequate to compensate for the former.<sup>3</sup> Of course, the apparent decline in costs may have been completely unrelated to the decline in revenue. In any case, one should not infer from the revenue numbers alone that the provision of public goods is or is not threatened.

The equation above reveals that even a decline in profit from traditional inpatient care services ( $\pi$ ) does not necessarily spell trouble for community-oriented services. If donations are highly sensitive to hospital profitability

1. The term *X-inefficiency* was coined by Harvey Leibenstein (1966).

2. The increase in concentration may be partly responsible for the recent increase in hospital profitability noted by Frank and Salkever. See also Barro and Cutler's (1997) case study of consolidation in the Massachusetts medical care marketplace.

3. There is an obvious parallel in "supply-side economics": A reduction in the tax rate ( $t$ ) will increase the tax base ( $Y$ ), but will it increase it enough to increase total tax revenue ( $tY$ )?

( $\gamma > 1$ ), resources available to provide those services would be inversely related to profitability. There is no evidence to support this extreme view. But the point that the marginal response of donations to profits ( $\gamma$ ) acts like a “tax” on the supply of public goods is an important one.

For simplicity, the preceding analysis ignored a source of net income (and determinant of donations) that figures prominently in Frank and Salkever’s analysis: diversification into nontraditional activities such as operation of primary care clinics, imaging centers, and home health care companies. They argue that this diversification was prompted by the decline in traditional revenue sources and was a new source of profits that maintained the financial health of the hospital, including its ability to supply public goods. (But diversification per se may reduce donations directly, as well as indirectly by increasing profits.) I am struck by the contrast between this sector and the world of business; the consensus seems to be that among corporations, *excess* profits (“free cash flow”), rather than declining revenues, triggers diversification, and that diversification destroys rather than creates shareholder value. I would also pose the question, If diversification was such a profitable strategy, why did hospitals have to be “forced” by declining traditional revenues to adopt it?

The paper by Jonathan Skinner and John Wennberg provides strong evidence for two puzzling facts. The first of these is that the intensity of medical resource use varies dramatically across regions of the United States (even after controlling for disease incidence). They report the following ratios of per capita utilization in Miami to per capita utilization in Minneapolis:

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Home health services	4.1
Inpatient services	1.5
Inpatient Medicare expenditure (last 6 months of life)	2.0
Primary MD visits (last 6 months of life)	1.8
Specialist MD visits (last 6 months of life)	5.4

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Such pronounced cross-sectional variation in medical resource use cries out for explanation. Skinner and Wennberg estimate regressions of average Medicare Part A reimbursements in the last six months of life on a number of health, resource, and financial variables, and find that average reimbursements are positively correlated with hospital beds and specialist MDs per capita and with the percent of nongovernment hospitals that are for-profit. They recognize, though, that one cannot necessarily infer from this that the presence of high medical resources *causes* high medical expenditure. The equation that they estimate bears some resemblance to the accounting identity between expenditure and the price-weighted sum of the quantities of each type of medical service consumed. Since specialist visits per capita are much higher in Miami than Minneapolis, the only reasons *not* to observe a positive correlation across regions between the

number of specialists per capita and average reimbursement would be that Miami specialists see far fewer patients per year or charge much lower fees. The reduced-form expenditure equation they estimate does not enable us to identify, or test hypotheses about, the parameters of the medical input supply or demand functions.

The second important fact that they document is that health outcomes (mortality) are uncorrelated across regions with medical resource use. Often, there is reason to expect the cross-sectional correlation between inputs and outputs to *overstate* the marginal productivity (or output elasticity) of inputs. Suppose that we have data on output and employment for a cross-section of firms, and that the firms vary with respect to some unobservable characteristic (such as managerial ability) that influences productivity. In competitive equilibrium, the firms with greatest managerial ability should employ the most workers, and as a result, the coefficient on employment in the production function would be biased upward. In other words, a positive input coefficient indicates not only that inputs are productive, on average, but also that they are allocated to the places where they are most productive; failure to observe a positive relationship between medical resource use and outcomes suggests that neither of these is true.

I have also examined the relationship between real medical expenditure and a measure of mortality; my analysis is at the national level using longitudinal data for a sample of 17 countries from the Organization for Economic Cooperation and Development (OECD) health database. I distinguished three types of medical expenditure: inpatient care (INPAT), ambulatory care (AMBUL), and pharmaceuticals (PHARM), all measured in purchasing-power-parity-adjusted expenditure per capita. The average expenditure shares of these three inputs of the “health production function” are about 50 percent, 35 percent, and 15 percent, respectively. The mortality measure I used is potential life-years lost before age 65 per 100,000 population (PLYL). The model that I estimated was

$$\ln \text{PLYL}_{it} = \beta_1 \ln \text{INPAT}_{it} + \beta_2 \ln \text{AMBUL}_{it} \\ + \beta_3 \ln \text{PHARM}_{it} + \alpha_i + \delta_t + u_{it},$$

where  $i = 1, \dots, 17$  OECD countries; and  $t = 1960, 1965, \dots, 1990$ . Since the model includes fixed country and year effects, estimates of the  $\beta$  coefficients reveal whether or not countries with above-average increases in per capita medical expenditures experienced above-average reductions in per capita life-years lost. (I think it would be desirable for Skinner and Wennberg to add cross-region data for at least one additional year to their sample, so that they could include fixed-region effects to control for stable, unobserved determinants of expenditure and/or outcomes.) The estimated equation was ( $t$ -statistics in parentheses;  $N = 80$ ):

$$\ln \text{PLYL}_{it} = -.038 \ln \text{INPAT}_{it} - .092 \ln \text{AMBUL}_{it} - .187 \ln \text{PHARM}_{it} + \alpha_i + \delta_i + u_{it}$$

(0.51)                      (1.79)                      (2.51)

Consistent with Skinner and Wennberg’s findings, there is not a statistically significant relationship between inpatient expenditures—which account for about half of total health care costs—and this measure of premature mortality. The coefficient on ambulatory medical expenditure is only marginally statistically significant. Pharmaceutical expenditure, which accounts for a fairly small share of total health expenditures, is the only component that has a highly significant (and large) effect on mortality. (To assess the relative marginal productivity of the three inputs, one should divide the elasticities by their respective expenditure shares.) This finding is robust to changes in the mortality measure and the measure of pharmaceutical utilization. I also estimated models of the form

$$\ln X_{it} = \beta \ln \text{N\_DRUGS}_{it} + \alpha_i + \delta_i + u_{it}$$

where  $X$  is a mortality measure and  $\text{N\_DRUGS}$  is annual per capita consumption of medicines (in defined daily dosages). The estimates of  $\beta$  are shown below:

$X$	$\beta$
Life expectancy of males at age 40 ( $N = 63$ )	.022 (2.55)
Potential life-years lost before age 65 per 100,000 males ( $N = 83$ )	-.070 (2.18)
Potential life-years lost before age 65 per 100,000 females ( $N = 83$ )	-.129 (2.81)

These estimates are consistent with the hypothesis that utilization of pharmaceuticals significantly reduces mortality. The positive relationship between life expectancy and pharmaceutical use may partly reflect reverse causality, however: Since pharmaceutical consumption tends to increase with age (beyond age 40), exogenous increases in life expectancy may lead to increased pharmaceutical use. Since reverse causality should also result in overstatement of the relationship between inpatient expenditure and mortality, the apparent absence of any relationship between the two is especially strong evidence that inpatient expenditure does not reduce mortality.

The puzzle amply documented by Skinner and Wennberg—failure to detect a relationship between expenditures (especially public expenditures) and outcomes—is not unique to this type of expenditure. As Machado (1997) observes, 30 years ago the Coleman Report concluded that expenditures per student and school inputs had no measurable impact on student performance; the latter depended primarily on student background. Such conclusions were so controversial that an avalanche of fur-



ther studies emerged, but very little consensus has been reached among researchers about whether, or how much, “money matters” in education.

Machado attempted to determine the effect of public substance abuse treatment expenditures on outcomes (e.g., the number of abstinent discharged patients) using data from Maine’s Office of Substance Abuse (OSA). She noted that a simple regression of treatment outcomes on expenditures per patient showed no positive relationship between these two variables. She recognized, however, that failure to observe a relationship might be attributable to the potential endogeneity of expenditures: OSA might allocate more funds per patient to programs that treat more difficult patients. Not controlling for patient and other characteristics would dampen the estimated impact of funds on outcomes. She pursued two different econometric strategies to attempt to address the endogeneity of funds per patient. But even after accounting for the potential endogeneity of expenditures, she concluded that “the marginal impact of expenditures per patient on the number of abstinent people in the state of Maine is so small that it is not economically significant.”

The data presented by Skinner and Wennberg about the allocation of medical resources in the United States were prepared with great skill and are of considerable interest and importance. Explanation of these relationships (or lack of relationship!) should be a high priority in future research.

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