

GAO

Report to the Ranking Minority Member
Committee on Ways and Means
House of Representatives

December 1994

HOSPITAL COSTS

Cost Control Efforts at 17 Texas Hospitals





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

Accounting and Information
Management Division

B-259150

December 9, 1994

The Honorable Bill Archer
Ranking Minority Member
Committee on Ways and Means
House of Representatives

Dear Mr. Archer:

As you requested, this report provides information on how the increased use of managed care may have influenced cost control efforts at 17 Texas urban hospitals. It specifically identifies the types of costs that are subject to these hospitals' control and those that are not.¹ It also highlights cost control efforts that are significantly changing how the 17 hospitals operate. This report documents and expands upon the briefing provided to you on September 28, 1994.

During the last decade, employers have increasingly turned to managed care health plans to constrain the steadily rising cost of health benefits. Managed care plans generally use discounted and fixed reimbursement mechanisms that provide incentives for hospitals to limit costs. Enrollment in managed care health plans, such as health maintenance organizations (HMOs) and preferred provider organizations (PPOs), has increased throughout most of the nation. HMOs have existed since the 1930s, but their market penetration has increased significantly over the past 10 years. PPOs are a relatively new development, having begun operations only about 10 years ago. As of December 31, 1992, HMOs enrolled 16.3 percent of the population. In addition, 19.5 percent of the population was enrolled in PPOs.² Managed care enrollment grew to more than half of all employees covered by employer-sponsored group health insurance in 1992.

In 1992, approximately 80 percent of community hospitals contracted with at least one managed care health plan. Combined with previous pressures for discounts and the use of fixed reimbursement from Medicare, Medicaid, and other payers, the increase in managed care has impacted hospitals. During 1993, total hospital revenues and expenses grew at their lowest annual growth rate since 1985.³ Industry officials attributed this

¹Unless otherwise noted, the term "costs" refers to total hospital operating costs.

²American Managed Care and Review Association Foundation Managed Health Care Data Base.

³American Hospital Association National Panel Survey.

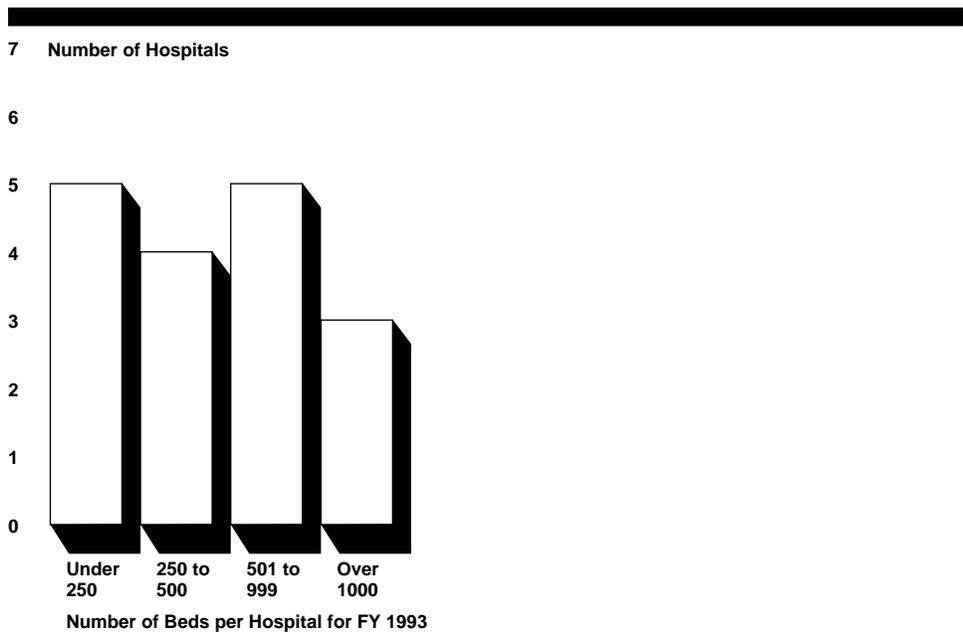
slower growth in part to competition for managed care business and corresponding hospital cost control efforts. While managed care market penetration in Texas lags national averages, the number of patients enrolled in managed care plans has increased rapidly at most of the 17 hospitals. One of the 17 hospitals, for example, reported that managed care revenues as a percentage of total revenues increased from zero percent to nearly 40 percent since 1989, representing nearly 90 percent of its revenues from commercial sources. Thus, your office was specifically interested in how managed care was affecting specific Texas hospitals.

Scope and Methodology

To identify cost factors to be reviewed at the 17 Texas hospitals, we held discussions with officials from hospitals; government agencies; and associations representing hospitals, physicians, payers, and consumers. Additionally, we reviewed the literature on hospital costs and cost control techniques. Based on this research, we identified the following 10 cost factors to review: physician practice patterns, medical technology, labor, supplies and drugs, case complexity, administration, information systems, medical professional liability, regulations and accreditation, and AIDS treatment.

We then judgmentally selected 17 Texas urban general care hospitals located in the Dallas, Fort Worth, and Houston metropolitan areas to review their data related to the 10 cost factors. We selected the specific hospitals to ensure a variety of ownership type and size. The 17 hospitals include 7 for-profit hospitals, 7 not-for-profit hospitals, and 3 government hospitals. Because we did not use statistical methods to select the 17 hospitals, the results of our work do not necessarily represent conditions at other hospitals and cannot be used to characterize other hospitals. Also, because our work often involved data that these hospitals regarded as proprietary or sensitive, we agreed not to identify individual hospitals in examples cited in our report and not to disclose any data they wished to protect. However, figures 1 through 4 provide some general information on characteristics of the 17 hospitals.

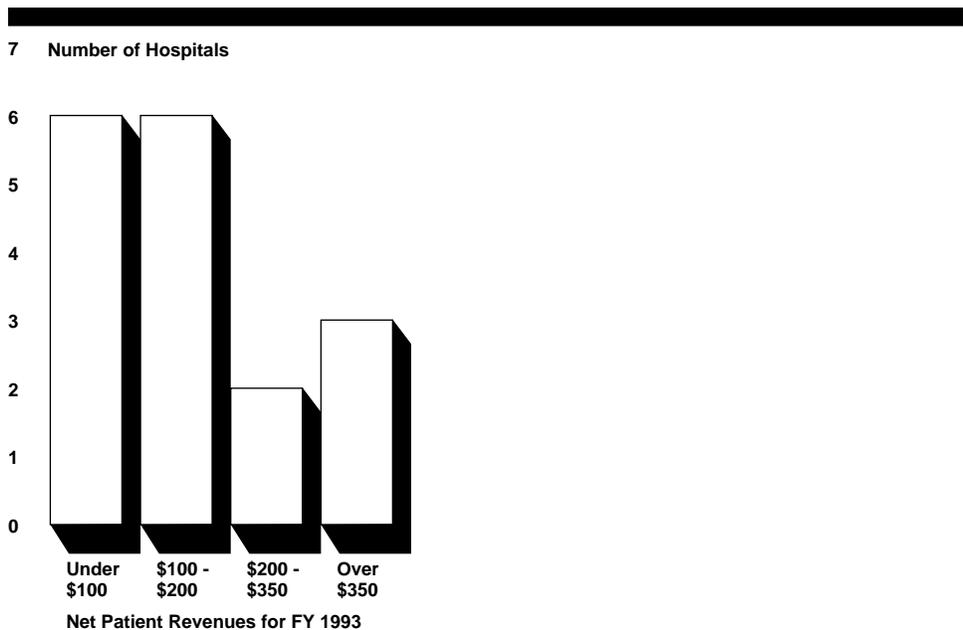
Figure 1: Beds in Service at the 17 Hospitals



Hospital Size by Number of Beds: Total number of beds in service in the inpatient acute care units of a hospital at the end of its fiscal year.

Source: Unaudited Medicare Cost Reports.

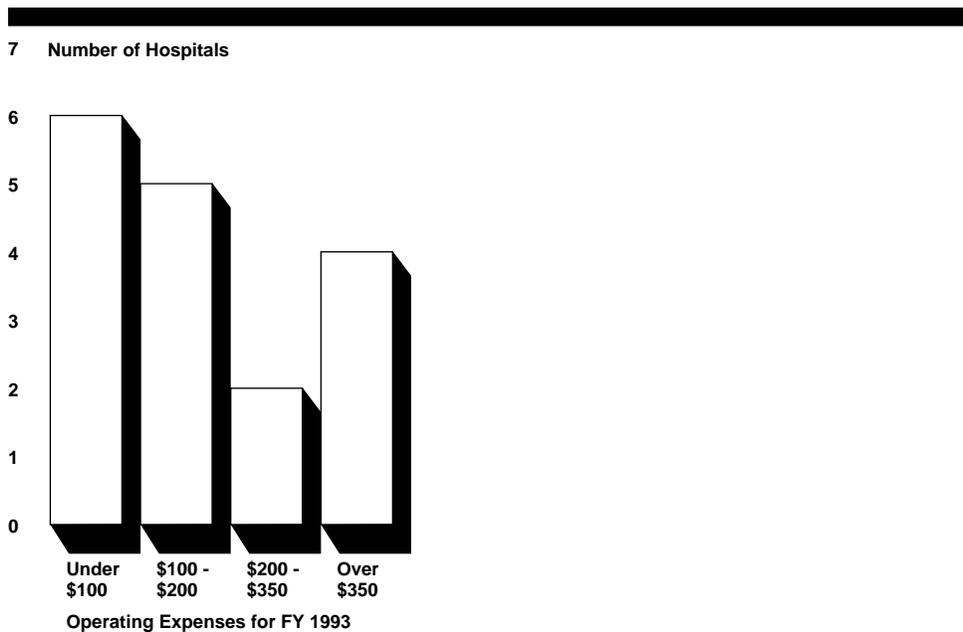
Figure 2: Fiscal Year 1993 Net Patient Revenues at the 17 Hospitals (Dollars in Millions)



Net Patient Revenues: Total charges for hospital services less charity care provided, contractual allowances, and other discounts.

Source: Unaudited Medicare Cost Reports.

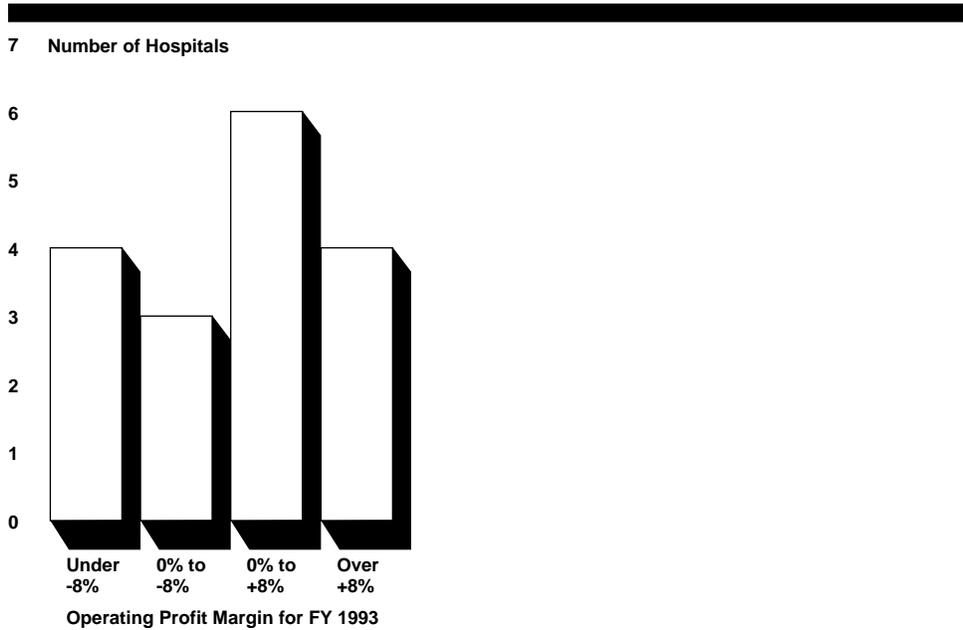
Figure 3: Fiscal Year 1993 Operating Expenses at the 17 Hospitals (Dollars in Millions)



Operating Expenses: Total costs for hospital services delivered.

Source: Unaudited Medicare Cost Reports.

Figure 4: Fiscal Year 1993 Operating Profit Margins at the 17 Hospitals



Operating Profit Margin: Difference between total operating revenues and total operating expenses, expressed as a percentage of total operating revenue.

Source: Unaudited Medicare Cost Reports.

Prior to visiting the hospitals, we developed financial profiles for each of them to gain an understanding of their financial conditions and business operations. We developed the profiles by reviewing and analyzing unaudited Medicare Costs Reports covering the hospitals’ fiscal years 1987 through 1993. Specifically, we calculated financial performance ratios for each hospital, including patient and payer mix ratios, capital structure measures, liquidity ratios, and profitability measures. We also reviewed and analyzed the hospitals’ most recent audited financial statements and reports when such information was available. In addition, we reviewed major trade publications to identify specific hospital activities and transactions that may affect their revenues, costs, or financial performance.

During our visits to the 17 hospitals, we interviewed administrators, chief financial officers, and other high-ranking officials and requested that the hospitals prepare specific cost information concerning (1) the hospitals’ experiences with regard to the 10 cost factors, (2) specific cost control

measures and initiatives taken in response to the effect of these cost factors, and (3) obstacles to the hospitals' efforts to control costs. Some of the hospitals did not provide some of the requested cost information to us because it was not readily available from their information systems. The cost information provided to us by the hospitals was unaudited and could not be quickly or easily verified.

We performed our work between November 1993 and August 1994 in accordance with generally accepted government auditing standards. We did not obtain comments from the 17 hospitals on the contents of this report.

Results in Brief

As enrollment in managed care health plans increases, the 17 Texas hospitals are experiencing a shift in commercial reimbursement from fee-for-service payments equaling hospital charges to negotiated discounts and fixed payments.⁴ These emerging reimbursement methods have reduced margins from commercial revenue sources and limit these hospitals' abilities to cover (1) losses realized on uninsured patients and (2) lower margins realized on patients covered by fixed-rate payments, primarily from Medicare⁵ and Medicaid. Additionally, fixed payment methods shift financial risk to the 17 hospitals as they stand to lose money if costs exceed preestablished payment rates. Managed care health plans generally seek to contract with less costly hospitals in service networks⁶ that offer the full array of inpatient and outpatient services across a wide geographic area. As such, the 17 hospitals are competing on the basis of price and most have entered into service networks to attract managed care business.

To maintain profitability under negotiated discount and fixed rate reimbursement systems, the 17 hospitals reviewed are engaging in a variety of cost control measures. These measures include attempts to standardize physician practice patterns to eliminate unnecessary

⁴Most of the 17 hospitals' managed care contracts currently provide discounted fee, per diem, and case-based reimbursement. Five have contracts based on capitated prepayments, but hospital and industry officials we spoke with told us that capitated prepayment will comprise an increasing percentage of the 17 hospitals' revenues in the near future.

⁵Medicare implemented the Prospective Payment System (PPS) in 1983. Under PPS, Medicare pays hospitals a predetermined fixed rate for each Medicare discharge, based on a patient's diagnosis. This payment system is similar to those subsequently adopted by some managed care payers and was intended to provide hospitals incentives to improve efficiency and contain costs.

⁶A service network is a group of different types of health care providers, which can include hospitals, physicians, and allied health care professionals that are affiliated through common ownership, joint ventures, or other legal arrangements.

procedures, acquiring medical technology through joint ventures with other hospitals to reduce capital outlays, and other activities that reduce costs by decreasing expenditures or increasing efficiencies. Officials also cited factors they believed were more difficult to control that limit cost control efforts, including medical professional liability and the inability to obtain discounts on sole source drugs and medical supplies.

Managed Care Reimbursement Methods Have Influenced the 17 Hospitals' Environment

An increasing number of employers offer managed care health plans because they believe that such plans are less costly than traditional fee-for-service indemnity plans. Managed care is characterized by a wide variety of health care plans, including HMOs and PPOs. Managed care plans attempt to reduce costs by employing several strategies. First, managed care plans attempt to control costs by directing patients to a limited number of less costly or more efficient hospitals. Limiting the number of providers also affords managed care payers leverage in price negotiations if they cover enough enrollees to significantly affect the hospitals' business volume. Second, managed care payers use payment methods that lower prices and provide hospitals with incentives to control costs. These methods include negotiated discounts and fixed per diem, case, and capitated rates.⁷ Third, managed care payers employ utilization review techniques, such as hospital preadmission review, intended to reduce costs by avoiding what they deem as unnecessary admissions and lengthy stays.

The increase in the proportion of hospital patients covered by fixed-rate payment systems as managed care market penetration increased has given hospitals enhanced incentives to control their costs. Moreover, the propensity of managed care plans to contract with a limited number of hospitals has introduced more price competition into the market than was the case in the past when indemnity insurance and the fee-for-service reimbursement method predominated. Hospital and industry officials in Texas told us that the combination of fixed-rate payment and increased price competition has significantly affected the hospital environment in the state over the past few years.⁸

⁷Per diem rates reimburse hospitals a fixed amount per day. Case rates provide fixed reimbursement for an entire stay, such as an admission for coronary artery bypass surgery. Capitation involves prepaying a hospital a fixed amount per enrollee per month.

⁸One of the 17 hospitals did not negotiate discounted, case rate, or capitated contracts with managed care plans because hospital management believed that the hospital could remain profitable by offering high quality care on a fee-for-service basis to its commercial patients. As more of its commercial patients enrolled in managed care plans, however, they were directed to other, less costly hospitals. The hospital's occupancy rate declined, resulting in a negative fiscal year 1993 operating margin.

Under fee-for-service reimbursement, hospitals are paid based upon their charges for each service and item furnished to patients. Hospitals have little incentive to control costs because, as long as charges are high enough, they recover their costs. Also, hospitals have little incentive to control service use under fee-for-service because the more services are provided, the more revenue is received. On the other hand, fixed-rate payment methods give hospitals incentives to control costs and service use because costs above the payment rate for a patient result in a loss on that patient.

The shift away from fee-for-service toward fixed-rate payment has had another effect on the 17 Texas hospitals. In the past, hospitals were able to use profits on fee-for-service patients to cover (1) losses realized on uninsured patients and (2) lower margins realized on patients covered by fixed-rate payments, primarily from Medicare and Medicaid. As the pool of fee-for-service patients has steadily decreased, this strategy has become less and less viable. This, in turn, has further enhanced the cost control incentives of fixed-rate payment systems in general and managed care plans in particular.

In addition to offering low-cost, quality care, hospitals must often enter into service networks with other providers that offer a full range of inpatient and outpatient services over a wide geographic area to attract managed care contracts. Managed care payers that we spoke to prefer to negotiate one contract with a service network for all types of medical care rather than many contracts for specific ones. Additionally, managed care payers prefer that services be convenient for enrollees regardless of where they live or work. As a result, most of the 17 hospitals have recently joined service networks with other providers to compete for managed care contracts. As discussed in the appendixes, these service networks may provide hospitals with additional opportunities to reduce costs and improve quality, but will also entail significant investments.

Trends and Cost Factors at the 17 Hospitals

Appendixes I through X discuss in greater detail how each of the 10 cost factors affected the 17 hospitals we reviewed. Many of the hospitals are taking actions to control costs associated with the 10 factors; however, numerous obstacles may impede their cost control efforts. Below, we synopsize the cost control trends and provide a few examples of cost control techniques and obstacles.

Physician Practice Patterns (Appendix I)

Physician practice patterns are a major determinant of hospital costs at the 17 hospitals we visited, according to hospital officials. Currently, physician practice patterns vary greatly within these hospitals, resulting in significantly different costs for physicians performing the same procedure. One hospital reported that average costs by physician for the same procedure varied from \$11,111 to \$21,714 due to practice pattern differences such as the number and type of ancillary services used.

- Cost Control Techniques: As these hospitals derive an increasing percentage of their revenues from discounted, per diem, case rate, and capitated plans, they have started to work with physicians to standardize practice patterns to reduce unnecessary costs. Initial attempts by these hospitals to standardize practice patterns have lowered costs for selected procedures. For example, after one hospital achieved a more standardized physician practice pattern for a specific procedure, average costs associated with performing the procedure dropped from \$14,500 to \$11,171, or about 23 percent.
- Obstacles: In most cases, hospital costs do not directly affect the amount physicians receive for their services. Therefore, physicians have little financial incentive to change their practice patterns. Further, physician objections to economic credentialing may limit the hospitals' ability to enforce standard practice patterns.⁹

Medical Technology (Appendix II)

Technology has been a major cost driver at the selected hospitals, but managed care has changed technology acquisition incentives for most of these hospitals. Officials from the four hospitals that perform the most complex and costly procedures provided information indicating that capital outlays for medical technology as a percentage of operating expenses are decreasing, due in part to the changed incentives. Three of these four hospitals quantified 1993 outlays for medical technology, which ranged from 1.8 percent to 4 percent of total operating expenses.

- Cost Control Techniques: The 17 hospitals are taking various steps to minimize expenditures on technologies, including using existing assets more efficiently, entering into joint ventures with other providers, analyzing acquisition proposals to ensure that decisions weigh both cost and clinical factors, and discontinuing some low volume services.

⁹Credentialing involves the periodic review of the licenses, education, and training of all physicians seeking appointment in a hospital. It is similar to background checks of prospective nonphysician employees. Credentialing is designed to ensure that physicians are capable of performing their assigned duties. Economic credentialing encompasses these checks and also considers the likely cost of a physician's practice patterns compared to those of other physicians.

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- Obstacles: Concern about medical professional liability continues to motivate the 17 hospitals to acquire new medical equipment. Under tort law, providers whose techniques and equipment do not meet the community standard of care may be vulnerable to malpractice suits. Further, officials at these hospitals stated that legal issues, such as constraint of trade and anti-trust, may limit joint ventures and other equipment-sharing arrangements. We recently reported, however, that neither the Department of Justice nor the Federal Trade Commission has ever challenged a joint venture.¹⁰

Labor (Appendix III)

Labor represents a major operating expense for the 17 hospitals. Salary and benefits expenses ranged from 38 to 62 percent of these hospitals' total operating expenses in 1993. Cost increases have slowed in recent years as shortages have abated.

- Cost Control Techniques: The 17 hospitals are adopting or assessing staff requirements daily and are sending staff who are not needed home, reducing work forces, cross-training workers to perform multiple jobs, lowering the skill mix of their employees, and coordinating with allied health schools to minimize the risk of future labor shortages.
- Obstacles: Professional licensing requirements and the increasing complexity level of patients in the 17 hospitals limit the hospitals' ability to reduce the skill mixes of their employees. Additionally, technological innovations often create the need for more highly skilled employees that command higher salaries.

Medical Supplies and Drugs (Appendix IV)

Nine of the 17 hospitals provided medical supply and drug costs incurred during 1992 and 1993. The combined cost of medical supplies and drugs at these hospitals ranged from 8.1 to 13 percent of 1993 operating expenses. Of the nine hospitals, eight reported increases in medical supply costs in 1993, averaging over 14.4 percent, and nine reported increases in drug costs, averaging 14.5 percent. Hospital officials stated that new medical supplies and drugs are responsible for a disproportionate share of the growth in total medical supply and drug costs.

- Cost Control Techniques: Sixteen of the 17 hospitals are entering or have entered group purchase contracts with other health care providers to obtain greater discounts from suppliers. Many of the 17 hospitals are also

¹⁰Health Care: Federal and State Antitrust Actions Concerning the Health Care Industry (GAO/HEHS-94-220, August 5, 1994).

controlling costs by negotiating contracts that provide suppliers with financial incentives to reduce utilization, establishing formularies to encourage the use of less expensive generic or therapeutic drug substitutes, and educating physicians on lower cost alternative supplies and drugs.

- Obstacles: As one would expect, most of the 17 hospitals are less successful in using group purchasing leverage to obtain discounts on new and sole source medical supplies and drugs.

Case Severity (Appendix V)

The 17 hospitals are treating an increasing number of less severe cases in outpatient settings, leaving the costliest and most severe cases in inpatient care. As the hospitals derive an increasing percentage of their revenues from discounted and fixed-rate reimbursement, they have an incentive to reduce costs by providing diagnostic testing prior to admission and discharging patients to less costly treatment settings as quickly as possible.

- Cost Control Techniques: Ten of the 17 hospitals are adopting or developing clinical pathways¹¹ to more efficiently treat patients and to quickly discharge patients to less expensive treatment settings. One hospital, for example, saw average charges decrease by \$15,000 per patient after developing a clinical pathway for one of its coronary surgical procedures. To reduce inpatient case complexity, a few of the 17 hospitals are focusing more on preventive outpatient measures. These measures attempt to reduce admissions or minimize complications following admissions of patients in plans paying the hospital capitated fees.
- Obstacles: Social factors beyond some of the 17 hospitals' control, such as crime-related injuries and uninsured or underinsured patients, increase costs and limit the hospitals' ability to reduce case severity and move some patients to less costly settings. While these social factors significantly increased costs at the 3 public hospitals, officials from 8 of the other 14 hospitals stated that these factors increased costs at their hospitals as well.

Administration (Appendix VI)

Sixteen of the 17 hospitals quantified administrative expenses as a percentage of 1993 operating expenses. The administrative expenses for these hospitals ranged from 14.7 percent to 32.8 percent of operating

¹¹Clinical pathways are guidelines for specific diagnoses that include the sequence and timing of major interventions by physicians, nurses, and staff of ancillary departments such as laboratory, dietary, and radiology.

expenses.¹² Officials from 16 of the 17 hospitals reported that managed care is increasing administrative costs by complicating the billing processes, expanding utilization controls, and increasing contract management activities. One hospital estimated that total additional administrative costs increased by over \$1 million annually, or by 3.4 percent, due to the requirements of managed care health plans.

- Cost Control Techniques: To cut costs associated with billing, utilization control, and contract management, most of the 17 hospitals are contracting more with billing companies, automating administrative functions, or attempting to reduce variation in contract terms and requirements.
- Obstacles: Hospital officials stated that their hospitals cannot automate all billing and collecting for all managed care payers because some do not have adequate information systems. Further, some managed care payers currently enjoy leverage in contract negotiations because they can offer the hospitals a significant volume of business. As a result, they successfully resist contract standardization.

Information Systems (Appendix VII)

As the 17 hospitals assume greater financial risk under managed care contracts that provide fixed reimbursement, the need to accurately track costs by specific procedure and payer becomes more important to avoid financial losses. As these hospitals negotiate capitated contracts and enter into service networks with other providers to offer the full range of inpatient and outpatient care, they will also need accurate information on costs incurred in other settings. In addition, to successfully compete for managed care contracts, the hospitals are investing in clinical information systems to adequately manage service delivery and report treatment outcomes.

- Cost Control Techniques: Most of the 17 hospitals have either begun to develop, acquire, or research better cost and clinical information systems.
- Obstacles: The cost associated with information systems and the time needed to implement the systems may prevent some of the hospitals from upgrading their systems before managed care represents a significant portion of their business. For example, one hospital plans to invest \$63 million over the next 4 to 5 years to upgrade its cost and clinical systems. Officials at the hospital estimated that managed care would

¹²The term "administrative costs" includes costs such as general administration, general accounting, patients' accounts and admitting, data processing, and medical records.

represent 25 percent of their hospital's revenues by the end of fiscal year 1994.

Professional Liability (Appendix VIII)

None of the 17 hospitals could quantify all costs related to liability. While hospital and industry officials stated that defensive medicine is a significant component of their liability-related costs, none could measure this specific cost. Costs associated with liability that were measurable, such as those for self-insurance funding, catastrophic coverage, legal fees and salaries, and settlements, varied greatly among the hospitals. Measurable liability costs at the 17 hospitals ranged from less than 1 percent to over 7 percent of operating expenses during 1993.¹³ Limited liability for public hospitals and differences in the types of services the 17 hospitals deliver accounted for some of the variation in hospital costs. Further, some of the hospitals have experienced increases in liability costs, while others experienced decreases. At some hospitals, measurable liability costs varied greatly from year to year due to large, one time settlements and the introduction of new, high-risk services.

- Cost Control Techniques: The 17 hospitals are attempting to minimize liability costs by self-insuring, intensifying risk management programs, and more closely screening prospective employees and physicians.
- Obstacles: Officials stated that one obstacle hospitals face in controlling liability costs is their inability to control the rising number of claims filed against them. Also, some hospital officials stated that because some physicians carry insufficient liability coverage, their hospitals are at risk of becoming "deep pockets" in malpractice claims.

Regulatory and Accreditation Costs (Appendix IX)

While officials at most of the 17 hospitals stated that the cost of compliance with numerous laws and regulations set by regulatory bodies was significant and increasing, they did not routinely quantify and analyze these costs. For our review, four hospitals estimated their costs of complying with regulations and accreditation standards. These estimates ranged from 0.6 percent to 5.6 percent of 1993 operating expenses. However, while officials from the four hospitals stated that their hospitals would discontinue some compliance activities in the absence of regulations and accreditation standards, their hospitals would continue others, such as utilization review and quality improvement, because they are designed to protect the health and safety of patients and employees.

¹³The 17 hospitals did not provide consistent liability-related cost data. Their cost estimates include various mixes of insurance costs, damages, risk management, and other expenses.

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- Cost Control Techniques: The 17 hospitals have attempted to minimize compliance costs by taking actions, such as forming group purchasing cooperatives to obtain discounts from infectious waste disposal contractors.
 - Obstacles: Many regulations and standards require costly hospital actions in response to factors that are beyond the hospitals' control, such as the outbreak of diseases.

AIDS (Appendix X)

Only 3 of the 17 hospitals treat a significant number of AIDS patients. However, all 17 hospitals incur costs to comply with guidelines, known as "universal precautions", intended to minimize the spread of AIDS. Officials from most of the hospitals stated that their hospitals would implement these precautions in the absence of AIDS because they protect employees and patients from other infectious diseases.

- Cost Control Techniques: When the first cases of AIDS were diagnosed, the disease was treated primarily on an inpatient basis. Although inpatient care is still typically required, especially during the last stages of the disease, the three hospitals are providing more care in less costly outpatient settings. Through discharge planning and case management programs, the three hospitals are coordinating with community resources, such as home health care and hospice arrangements, to minimize AIDS treatment costs.
- Obstacles: The 3 hospitals may have difficulty controlling future AIDS-related costs because of the changing demographics of the recently diagnosed AIDS population. According to one hospital official, a growing number of AIDS cases involve women and children, who have limited access to residential or medically managed day care in the community. As a result, the hospitals may have to provide more costly inpatient care to these patients until they can be transferred to community facilities.

Unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days from its issue date. At that time, copies of this report will be made available to interested parties upon request. Please contact me at (202) 512-8549 if you or your staff have any questions concerning this report. Major contributors to this report are listed in appendix XI.

Sincerely yours,

A handwritten signature in black ink that reads "John W. Hill, Jr." The signature is written in a cursive style with a large, stylized initial 'J'.

John W. Hill, Jr.
Director, Financial Management Policies
and Issues

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Abbreviations

AIDS	Acquired Immune Deficiency Syndrome
HMO	Health Maintenance Organization
JCAHO	Joint Commission on the Accreditation of Healthcare Organizations
PPO	Preferred Provider Organization
PPS	Prospective Payment System

Physician Practice Patterns

Physician Practice Patterns Are a Significant Cost Driver in Hospitals

Industry officials and officials from the 17 hospitals stated that physician practice patterns are a significant determinant of hospital costs. Although the Texas Medical Practice Act generally prevents the 17 hospitals from employing physicians, physicians affect the hospitals' costs because they admit and discharge patients, order tests and prescribe medications, choose the type and quantity of medical supplies used, and make numerous clinical decisions regarding specific patient treatment. Under fee-for-service reimbursement, hospitals have little incentive to monitor physician practice patterns because payers reimburse hospitals for most services provided. However, as the 17 hospitals derive an increasing percentage of their revenues from discounted and fixed reimbursement plans, they are beginning to work with physicians to standardize practice patterns to avoid unnecessary costs.

Currently, physician practice patterns at the 17 hospitals vary greatly, resulting in significantly different costs across physicians performing the same procedure. For example, officials from one hospital that analyzed its physicians' practice patterns for total hip replacement surgery reported that severity-adjusted¹ cost ranged from an average of \$11,111 for one physician to \$21,714 for another and length of stay ranged from an average of 5.8 days to 12 days. The hospital determined that the variation resulted from physician practice pattern differences involving surgical preparation, the number and types of ancillary services ordered, the length of time patients spent in the operating room and in intensive care, and the type of prosthesis² used. Another hospital analyzed the propensity of its physicians to perform Cesarean deliveries instead of less expensive delivery practices and reported that, all factors being equal, some physicians were twice as likely to perform Cesarean deliveries than others.

The 17 Hospitals Cite Managed Care as Motivating Practice Patterns Analysis

Most of the 17 hospitals have to varying degrees begun to analyze their physicians' practice patterns to reduce costs. Their efforts have focused on high-volume and high-cost procedures, including orthopedic surgeries, such as total knee and total hip replacement, and cardiovascular surgeries, such as coronary artery bypass graft surgery and cardiac catheterization.

Typically, the hospitals work with their physicians to collect data related to diagnosis, resource utilization, and cost. The hospitals and physicians then use the information as the basis for discussions about the

¹The hospital adjusted costs for case severity by excluding from its analysis certain types of hip replacement cases that involve longer lengths of stay and higher costs.

²A prosthesis is an artificial device to replace a missing part of the body.

appropriateness and necessity of costly utilization patterns. The objective of the discussions is for the hospitals and the physicians to establish standardized treatment protocols for the diagnoses studied. Although one hospital has analyzed its physicians' practices for 40 procedures, most of the 17 hospitals have either reviewed and accumulated data for only a few procedures or identified those procedures they are going to begin evaluating. In addition, some hospitals have analyzed the practices of only their own physicians while others are comparing their physicians' practice patterns with the practices of physicians at other hospitals.

Initial Efforts Have Lowered Costs for Selected Procedures

According to officials at 6 of the 17 hospitals, initial efforts to standardize physician practice patterns have produced significant cost reductions. Several examples of cost reductions that hospital officials have attributed primarily to efforts to standardize physician practice patterns follow.

- Since it began attempting to standardize its physicians' practice patterns 4 years ago, one hospital has decreased the average costs for 40 procedures analyzed by an average of 35 percent and reduced the average length of stay by an average of 15 percent, from 10 days to 8.5 days.
- A second hospital initiated a project in October 1992 to reduce the costs associated with coronary surgical procedures. The effort resulted in estimated annual cost savings of about \$1,000,000, or an over 18 percent cost reduction for the procedures.
- A third hospital worked with its physicians to standardize practice patterns involving total hip replacement and total knee replacement surgeries. While average length of stay for hip replacement patients remained constant at 7.4 days subsequent to the standardization effort, average costs declined from \$14,143 to \$12,759, or about 10 percent. For total knee replacement, average length of stay declined from 9.1 to 6.8 days and average costs fell from \$14,500 to \$11,171, or about 23 percent.

Savings on Standardizing May Be Limited

While hospital officials stated that they encountered few problems while working with physicians to standardize practice patterns, some officials identified the following factors that may impede cost reductions.

Physician Reimbursement

Industry officials stated that physicians are generally reimbursed a fixed amount per procedure, which is not influenced by the type or number of hospital services they order. As a result, the physicians do not have a financial incentive to abide by standard practice patterns that change or

reduce the services they order. Moreover, the hospitals currently lack quality data for patient outcomes to determine whether the standardized practice patterns have an adverse impact on patient care. Some hospital officials stated that physicians require assurance that patient outcomes will remain constant or improve before they agree to alter their practice patterns.

Economic Credentialing

Hospital officials also noted that physician resistance to hospitals considering physician financial performance in their credentialing processes may limit their ability to enforce standard practice patterns. Other officials stated, however, that as global and capitated reimbursements increase for hospitals and physicians, and as hospitals and physicians forge new relationships to compete for managed care contracts, physicians will be encouraged to reduce costs by following standard practice patterns.

Medical Technology

The 17 Hospitals Believe Managed Care Has Changed Technology Investment Incentives

Officials from most of the 17 hospitals stated that managed care creates an incentive for their hospitals to limit expenditures on new technologies that increase costs because hospitals may have difficulty recouping their investments when revenue is based on discounted or fixed rates rather than costs or charges. This trend is different from the 1980s when nonprice competition, cost- and charge-based reimbursement, and medical liability risk provided incentives for hospitals to rapidly adopt costly new medical technology.¹ Additionally, managed care provides an incentive for the 17 hospitals to compete more on the basis of price because managed care payers prefer to contract with less costly hospitals. To be price competitive, most of the 17 hospitals are taking specific steps to reduce medical technology costs by using existing equipment more efficiently. While nonprice competition remains important, most hospital officials stated that managed care has introduced an incentive for hospitals to realize quality by specializing in fewer services and reducing the proliferation of new technology.

Hospital officials stated that most of the expensive, new equipment is purchased by hospitals that perform the most complex and costly procedures such as organ transplants. The four hospitals we visited that performed the most complex procedures provided information concerning their annual expenditures on medical technology that indicates that they are spending a decreasing percentage of their annual operating expenses on medical equipment. While data alone do not demonstrate a cause-and-effect relationship, officials from all four of these hospitals cited revenue constraints associated with an increase in managed care business as a significant factor responsible for the decreasing percentage of annual operating expenses devoted to medical equipment. One hospital spent over \$13 million in fiscal year 1993 on medical equipment, or 3.6 percent of operating expenses. The hospital plans to reduce 1994 expenditures to just over \$7 million. Another hospital's annual expenditures for medical equipment have remained constant at about \$20 million since fiscal year 1991. In fiscal year 1991, this amount represented 4.8 percent of operating expenses. In fiscal year 1993, this amount decreased to 4 percent. A third hospital spent \$2.7 million on medical equipment in fiscal year 1993, or 1.8 percent of its operating expenses. This amount was down from \$3 million in fiscal year 1992. Officials from a fourth hospital told us that while their hospital does not budget a specific amount annually for medical equipment expenditures, such expenditures as a percentage of annual operating expenses has declined over the past 5 years.

¹Hospital Costs: Adoption of Technologies Drives Cost Growth (GAO/HRD-92-120, September 9, 1992).

Options to Reduce Capital Outlays

The following are options hospitals are taking to reduce capital outlays for technology.

Using Equipment More Efficiently

To be price competitive, many of the 17 hospitals are taking specific steps to reduce medical technology costs by using existing equipment more efficiently. For example, one hospital is building a regional training center to instruct physicians to use new medical technologies such as laparoscopes² proficiently. While the laparoscope is itself a cost reducing technology, the hospital wants to maximize cost reductions by training physicians how to best use the technology. Other hospitals are avoiding the acquisition of costly technology by extending the hours that existing assets are used. For example, one hospital avoided acquiring a third magnetic resonance imaging machine by expanding imaging hours for its existing two machines from 8 to 12 hours per day. Several hospitals are realizing efficiencies by acquiring medical technology through joint ventures with other hospitals and health care providers. By increasing the number of patients that use one piece of equipment, the hospitals reduce per use costs.

Analyzing New Acquisition Proposals

Several of the 17 hospitals have reduced their acquisition of new medical technologies because incurring such additional costs without the ability to increase discounted or fixed managed care reimbursement would erode operating margins. Five of the hospitals are not acquiring new medical technology, but rather are only replacing and maintaining existing assets. Of those hospitals that continue to acquire new medical technology, the decreasing proportion of cost- and charge-based reimbursement has prompted most to employ methods to analyze acquisition proposals to ensure that decisions consider cost effectiveness as well as clinical effectiveness. Some hospitals have informal committees that review acquisition proposals and prioritize those that are approved. Other hospitals have more formal technology assessment groups that review and prioritize proposals. The hospitals in multi-hospital chains are also subject to corporate office influence in acquisition decisions. These committees and groups weigh such factors as forecasted utilization by payer in calculating the net present value of investments in medical technologies. Hospital officials stated that fewer new acquisitions are approved as a result of fixed managed care reimbursement and the smaller operating margins associated with managed care.

²A laparoscope is an instrument introduced surgically into the abdomen for examining pelvic organs.

Specializing in Fewer Services

Whereas nonprice competition once involved the proliferation and duplication of advanced medical technology, officials from 8 of the 17 hospitals stated that the hospitals are or will be offering fewer of the highly specialized services to achieve the treatment quality required by managed care payers. According to hospital officials and industry experts, managed care payers prefer to contract with high-volume hospitals because such hospitals are believed to produce better patient outcomes. Hospital officials and industry experts stated that in order to secure managed care contracts for procedures such as open heart surgery, hospitals must perform at least 350 to 400 procedures per year. As a result, some of the 17 hospitals are not purchasing the medical technology that would be required to offer services with an expected low volume or have discontinued low volume services. For example, a hospital official stated that one hospital service network did not have a member hospital that performed a high volume of open heart surgeries. To realize high volume, the service network designated only certain geographically dispersed member hospitals to perform all of the service network's open heart surgeries. One of the 17 hospitals is a member of this service network and was not designated to perform open heart surgeries. Consequently, it discontinued most complex cardiovascular services and is referring patients to the nearby designated member hospital. As a result, the hospital purchases significantly less new or replacement cardiovascular technology. One hospital official's opinion was that 80 percent of the open heart surgery units in the metropolitan area would close as a result of managed care plans' emphasis on obtaining quality by contracting with high-volume hospitals.

Limitations on Cost Savings

Several factors may impede attempts to minimize medical technology costs.

- **Medical liability.** Several hospital and industry officials stated that concerns about professional liability have not diminished. Under tort law, providers whose techniques and equipment do not meet the community standard of care may be vulnerable to malpractice suits.
- **Geographic constraints.** Geographic constraints and managed care payer requirements may limit service networks' abilities to avoid the duplication and proliferation of medical technology. For example, one hospital that belongs to a service network is opening a new special care unit even though a hospital located nearby, that is not a member of the service network, currently operates the same type of unit and has excess capacity. Hospital officials stated that they were opening the unit because the only

other hospital in the service network that offers such care is located 35 miles away and some managed care payers have indicated that the service network will have to offer the care locally if it wants to retain its contracts.

- Legal issues. Industry and hospital officials expressed concern about possible federal antitrust actions against service networks that reduce the number of hospitals that offer certain types of medical procedures or individual hospitals that participate in technology sharing arrangements. We recently reported, however, that thus far, the Department of Justice and the Federal Trade Commission have not challenged hospital joint ventures, which can include agreements to share patients, personnel, equipment, support services, and medical, diagnostic, or laboratory facilities.³
- Ownership issues. Officials from two hospitals involved in service networks in which member hospitals are not owned by a single entity told us that forging agreement among member hospitals as to which should perform certain high-volume services and which should discontinue such services will be difficult.

³Health Care: Federal and State Antitrust Actions Concerning the Health Care Industry (GAO/HEHS-94-220, August 5, 1994).

Labor

Labor Has Been a Significant Cost Factor but Increases Have Slowed

Labor is a significant component of the 17 hospitals' operating expenses. During fiscal year 1993, these hospitals' salary and benefits expenses ranged from 38 percent to 62 percent of their total operating expenses, according to the hospitals' Medicare cost reports. Due to the magnitude of labor-related expenses, hospital officials stated that changes in revenue caused by managed care are forcing hospitals to continually search for ways to reduce labor costs.

According to officials of the 17 hospitals, labor costs rose rapidly at their hospitals during the late 1980s and early 1990s. These officials identified a shortage of nurses as the primary factor responsible for the rapid labor cost increase. Officials stated that their hospitals' intense competition to fill vacant positions prompted hospitals to increase wages significantly and offer prospective nurses incentives such as hiring bonuses, reduced work weeks, and increased differentials for night and weekend shifts. For example, from 1989 to 1990, one hospital's hourly nurse wage rate increased by 13 percent while it increased its nursing staff from 850 to 1,057, more than 24 percent. In other cases, some of these hospitals could not fill their vacant positions and had to resort to paying their nurses overtime or contracting with temporary nursing services, which generally cost more than employing nurses directly.

According to hospital officials, labor cost increases at the 17 hospitals have slowed since the early 1990s. However, salaries for some professionals continue to rise rapidly due to a shortage of trained personnel. These professionals include physical therapists, nurse practitioners, nurses for special settings such as operating rooms, medical technologists, and medical transcribers. However, salaries for most classes of nurses and other hospital staff have stabilized as open positions at the hospitals have declined. For example, one hospital had not raised salaries for nurses since 1991 and had eliminated most shift differentials.

Hospitals Taking Actions to Minimize Costs

The hospitals reviewed are taking various actions aimed at minimizing labor cost increases. These actions include the following.

- Assessing daily staff needs. Officials from four hospitals stated that their hospitals review nursing requirements at the beginning of each shift. If the hospitals' patient census is low or its patient mix requires fewer nurses or support staff, they send excess staff home without pay or request that the staff take annual leave.

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- Reducing work forces. Officials from six hospitals stated that their hospitals have recently reduced their work force either through layoffs, attrition, or offering employees early retirement incentives. One hospital eliminated 1,520 positions during 1993 through a combination of such actions. The same hospital plans to eliminate another 600 positions in 1994. An official from this hospital stated that the hospital undertook this staff reduction effort to lower costs and be more competitive in its managed care pricing strategies. Another hospital reduced its payroll by 150 employees to reduce costs.
 - Cross-training. Seven hospitals are cross-training workers to enable them to perform multiple jobs. For example, one hospital is cross-training nurses to practice in multiple specialties and in both inpatient and outpatient settings. Another hospital is cross-training respiratory therapists to use electrocardiographs¹ during night shifts when the volume of both procedures is low.
 - Altering skill mix. Nine hospitals are reducing the skill mix of their nursing staff to include fewer registered nurses and more support staff.
 - Coordinating with allied health schools. Hospitals, in conjunction with the metropolitan hospital councils, are attempting to minimize the risk of future labor shortages by coordinating with local allied health schools to help ensure that graduates possess skills that correspond to hospitals' projected requirements.

Limitations to Hospital Efforts to Reduce Labor Costs

Hospital officials identified several obstacles to controlling labor costs. The following are some examples.

- Legal barriers. Some hospital officials stated that state licensing requirements and Joint Commission on the Accreditation of Health Care Organizations (JCAHO) standards require hospitals to maintain a more highly skilled nurse mix than they would maintain in the absence of these rules. One hospital, for example, estimated that it incurs from \$1 to \$9 per hour per nurse in additional salary expenses, depending on the type of nurse, because it believes that the standards require them to use more highly skilled nurses than they would otherwise use.
- Technological change. Hospital officials stated that technological innovations often create the need for more highly skilled employees or employees with new skills that command higher salaries. For example, one industry official stated that hospitals recently began utilizing nuclear medicine technology, which requires trained nuclear medicine

¹An electrocardiograph is an instrument for recording changes of electrical potential occurring during the heartbeat to diagnose heart irregularities.

technologists. However, area allied health schools have not yet graduated enough nuclear medicine technologists to meet hospitals' requirements. The official provided data indicating that as of December 31, 1993, area hospitals reported that 29.3 percent of their nuclear medicine technologists positions were currently vacant. As a result of this shortage, according to the industry official, salaries for these technologists have risen rapidly.

- **Patient complexity.** As discussed in appendix V, the 17 hospitals treat an increasing proportion of less severe cases in an outpatient setting while the most severely ill patients remain in the hospital. Hospital officials stated that the increasing severity of inpatients restricts their ability to reduce the skill mix of their nursing staffs.

Medical Supplies and Drugs

Drugs and Supply Costs Increasing at Most of the 17 Hospitals

Officials of the 17 hospitals stated that costs incurred for medical supplies and drugs are significant and increasing. Of the 9 hospitals that provided medical supply and drug costs incurred during 1992 and 1993, 8 reported an increase in medical supply costs, averaging 14.4 percent, and all 9 reported increases in drug costs, averaging 14.5 percent. The combined cost of medical supplies and drugs at these hospitals ranged from 8 to 14 percent of 1993 operating expenses. One hospital, for example, reported that from 1992 to 1993 it experienced a 17.6 percent increase in medical supply costs and a 46.6 percent increase in drug costs, while patient admissions dropped by 25.7 percent.

Officials of most of the 17 hospitals stated that a relatively small number of new drugs and supplies are responsible for a disproportionate amount of their total drug and supply costs. For example, one hospital official stated that 115 out of 2,200 line-item drugs account for 80 percent of his hospital's drug expenditures. Of these 115 line items, about one third are recently introduced drugs. Another hospital reported that 15 recently introduced drugs, or 0.6 percent of its 2,400 line items, accounted for over 34 percent of its drug costs since 1991.¹ One hospital official emphasized that a few medical supplies, such as catheters and intravenous tubing, are responsible for most of their hospitals' medical supply cost growth.

Hospitals Exercising Cost Control Techniques

The following are examples of techniques hospitals are using to control costs associated with medical supplies and drugs.

Group Purchasing

All of the 17 hospitals are working to negotiate better purchase contracts. Sixteen of the 17 hospitals are entering or have entered group purchase contracts with other health care providers to increase volume, which helps the group obtain greater discounts from pharmaceutical companies and medical supply manufacturers. Nine of the 17 hospitals provided estimates of cost savings achieved through these contracts, which ranged from 2 to 85 percent discounts from previous costs. One hospital estimated savings in fiscal year 1994 of \$4.7 million on its group purchases of drugs and another \$7 million on other supplies. These savings represented 45 percent of its annual drug costs and 38 percent of its annual supply costs. Another

¹While some drug therapies increase hospitals' pharmaceutical costs, they may reduce overall hospital costs, according to hospital officials. For example, hospital officials stated that their hospitals often avoid surgeries for prostate enlargement by treating patients with Proscar. Hospital officials also stated that using Neupogen to stimulate white blood cell production decreases overall costs by reducing antibiotic use and shortening patients' length of stay.

hospital projects 5-year savings of over \$13 million on group purchases of medical supplies and laboratory equipment.

Fixed Rate Contracts

To control medical supply costs, some of the 17 hospitals are negotiating fixed price contracts with vendors. Under fixed price contracts, vendors agree to provide all supplies needed for a predetermined price. Such agreements change vendor incentives from selling hospitals as many medical supplies as possible to limiting the number of medical supplies provided. For example, one hospital is negotiating a fixed price contract for sutures used in surgical procedures. The hospital anticipates that the proposed contract will encourage the vendor to help it minimize supply utilization through efforts such as more efficient packaging of supplies and fixed payment rates for supplies per procedure.

Drug Formularies

Formularies are lists of selected pharmaceuticals and their appropriate dosages felt to be the most useful and cost effective for patient care. Hospitals often develop their formularies under the aegis of a pharmacy and therapeutics committee. Formularies can be used to limit the number of drugs maintained by the hospital, which decreases inventory carrying costs and can increase hospitals' buying leverage when negotiating group purchase contracts. These committees have successfully reduced drug costs by eliminating duplicative or unnecessary drugs, utilizing therapeutic and generic substitutions, and restricting the use of certain expensive drugs when necessary. For example, one hospital estimates annual drug cost savings of over \$500,000 through recent formulary changes and restrictions. One hospital service network involving 4 of the 17 hospitals is considering standardizing formularies across all member hospitals. Hospital officials predict that this standardization will enable the hospitals in the service network to negotiate significantly higher discounts through existing group purchase contracts because they will be buying a larger volume of fewer drugs.

Physician Education

Many of the 17 hospitals are successfully reducing drug and medical supply costs through physician education programs. For example, one teaching hospital employs teams comprised of physicians, pharmacists, and administrators to identify and alter inefficient prescribing practices. By promoting cost awareness among physicians, the hospitals hope to prompt them to utilize expensive drugs and supplies more efficiently and use lower cost alternatives when appropriate. For example, one hospital

has initiated a program to reduce the cost of anti-rejection drug therapy by educating physicians to use less expensive drugs. The hospital estimates that this program will reduce anti-rejection therapy costs by 50 percent, resulting in annual savings of \$350,000. The same hospital has attempted to reduce expenditures on imaging agents by educating physicians to use less expensive contrast media when performing certain cardiovascular procedures. The hospital anticipates annual savings exceeding \$400,000.

Hospitals Have Difficulty Obtaining Discounts on New, Sole Source Drugs and Supplies

Most of the 17 hospitals are less successful in controlling the rising costs of new and sole source drugs and medical supplies.² Vendors are less willing to offer discounts on new and sole source items. Vendors and manufacturers aggressively market new and sole source drugs and supplies to physicians, who in turn expect hospitals to provide these items. For example, one hospital is experiencing increasing demand for a costly new, sole source drug to better control bleeding during heart surgery. Not only does the drug cost \$100 per dose, but its use also increases medical supply costs because it requires expensive equipment to deliver. In addition, the hospital expects demand for the drug to increase in the future as more of its physicians use the drug. An official from another hospital stated that the hospital is now using a new aortic valve in heart surgeries. Because the valve is available from only one source, the hospital has not been successful in negotiating discounts from its suppliers. Six hospitals provided estimates of the costs of new and sole source drugs. At one hospital, these drugs represented 65 percent of pharmaceutical costs.

²New drugs include those that have been on the market for 5 years or less. Sole source drugs and medical supplies include those with no available generic or therapeutic substitutes.

Case Severity

Inpatient Case Mix Is Increasing in Severity

The 17 hospitals are increasingly treating only their most severe and costly cases in the inpatient setting. For example, as measured by the hospitals' Medicare case mix indices, Medicare inpatient case severity and relative costliness increased by an average of 19.3 percent during the period spanning fiscal years 1986 through 1992. Hospital and industry officials stated that case severity and costliness is increasing for non-Medicare patients as well. Hospital and industry officials attributed this increase to treating a greater number of less severe cases, such as cataract removal and hernia repair, in less costly outpatient settings, leaving only the sickest patients in the hospital.

Hospitals Taking Measures to Reduce Case Severity and Length of Stay

Officials from nine hospitals stated that their hospitals have taken measures to reduce inpatient case severity prior to admitting patients. The following are examples.

- Two hospitals monitor the frequency of visits to hospital-affiliated primary care physicians by patients enrolled in a capitated insurance plan. The hospitals identify enrollees who have not been to primary care physicians for periodic evaluations and encourage them to schedule appointments. Hospital officials stated that while primary care evaluations involve some costs in the short run, they believe they reduce costs in the long run by enabling physicians to diagnose illnesses such as cancer in their early stages when they are less costly to treat.
- One hospital provides free transportation to prenatal care treatment for pregnant women covered by fixed Medicaid reimbursement who are at high risk of delivery complications. The officials stated that the hospital realizes positive margins on deliveries without complications for Medicaid patients, but incurs losses when complications arise because Medicaid reimbursement for treating most complications is below hospital costs.
- One hospital estimated that its program to minimize substance abuse by pregnant women saves \$5,795 per infant as a result of reduced neonatal intensive care unit utilization.
- Two hospitals participate in a national association that works with communities to improve local residents' nutrition, income and education, housing, family relations, and other factors that affect health status.

Hospitals are also taking steps to deliver acute care more efficiently so that they can more quickly discharge patients to less expensive treatment settings. While all 17 hospitals engage in activities such as case management, discharge planning, and utilization review to reduce costs associated with inpatient procedures, officials from 10 of the hospitals

stated that their hospitals have augmented these activities through the implementation of clinical pathways. Clinical pathways are guidelines for specific diagnoses that include the sequence and timing of major interventions by physicians, nurses, and staff of ancillary departments such as laboratory, dietary, and radiology. For example, one hospital's clinical pathway for uncomplicated pneumonia directs a nurse to obtain blood cultures on days three through five, a radiologist to obtain a chest x-ray on day four, and physicians and other departments to perform tasks at specified pathway intervals. Another hospital's clinical pathways include identifying factors such as advanced age, single parenthood, and immobility that may require social worker assistance to facilitate discharge. Typically, a case manager is responsible for verifying that physicians, nurses, and ancillary department staff are treating the patient at the time and in the manner specified by the pathway. By adhering to the pathway, hospitals attempt to minimize delays, decrease utilization, and quickly discharge patients to less expensive treatment settings such as skilled nursing facilities and home health care. For example, one hospital reported that the length of stay for coronary artery bypass patients on the clinical pathway was 8 days, compared to 13.5 days for patients not on the pathway, reducing charges by almost \$15,000 per patient.

Social Factors Contribute to High Severity Levels

Notwithstanding hospital efforts to minimize costs associated with increasing inpatient severity, hospital officials cited several social factors beyond their control that contribute to case severity and limit their ability to move patients to less expensive treatment settings. While social factors significantly increased costs at the 3 public hospitals, officials from 8 of the 14 private hospitals stated that those factors increased costs at their hospitals as well. These social factors include the following.

- Crime. Officials from six hospitals identified crime as a factor increasing hospital costs. One hospital reported that crime-related medical care consumes 10 percent of its budget. During 1992, hospital charges for stabbing cases averaged \$10,200. Charges for gunshot wounds averaged \$16,890. The same hospital is also incurring costs exceeding \$1.6 million to install security upgrades to prevent the increasing number of gang-related criminal activities inside the hospital. The upgrades include closed circuit television equipment, handheld metal detectors, and defenses against infant abduction. The hospital also will not discharge and provide less costly home health care to patients who live in high crime neighborhoods because the hospital will not send nurses and aides into the unsafe areas to provide care.

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- Uninsured and underinsured patients. Officials from five hospitals reported treating a large percentage of their patients through their emergency rooms because the patients are either uninsured or underinsured. In some cases, the patients are suffering from nonemergency conditions but lack the financial resources to obtain less expensive outpatient treatment. In other cases, the patients are suffering from advanced stages of diseases that could have been treated on an outpatient basis, but the patient lacked the resources to obtain such treatment.
 - Family fragmentation. Officials from two hospitals indicated that one cause of prolonged inpatient stays involves patients not having family members who are willing or able to provide support subsequent to discharge.
 - Homelessness. Officials from four hospitals stated that they cannot discharge patients to a home health care setting when the patient has no home. Officials of one hospital stated that the hospital frequently admits homeless patients who have complications caused by overexposure to inclement weather.

Administrative

Managed Care Adds Costs

Managed care has increased administrative costs at 16 of the 17 hospitals by requiring them to perform additional tasks involving billing, utilization control, and contract management. These hospitals quantified annual administrative expenses as a percentage of fiscal year 1993 operating expenses, ranging from 14.7 percent to 32.8 percent. Reported administrative expenses during fiscal year 1993 were about \$9 million at one of the smaller hospitals and about \$112 million at one of the larger hospitals. One hospital estimated that total additional administrative costs due to managed care requirements exceed \$1 million annually, which represented 3.4 percent of that hospital's fiscal year 1993 administrative expenses.

Billing

Officials of most of the 17 hospitals stated that managed care contracts add complexity to the billing process beyond that required for payers such as Medicare, Medicaid, and commercial fee-for-service insurers. While government and commercial fee-for-service policies generally involve deductibles, copayments, and varying collection time frames, managed care contracts can involve discounts, straight per diems, tiered per diems, global payments, carve outs,¹ per member per month capitation, stop loss provisions, and other features that traditional reimbursement measures do not have. Further, most government and commercial fee-for-service payers generally accept the standard form, UB 82, as an invoice. Many managed care payers, however, require hospitals to submit additional information with their invoices that applies their contracts' reimbursement terms and conditions to the charges on the invoices.

Because the hospitals implemented their existing billing systems before complicated managed care contracts became a significant source of hospital revenue, they cannot generate managed care bills without significant manual intervention to ensure that the hospitals bill the maximum amounts allowable under plan reimbursement provisions and hospital collections are not delayed because required documentation does not accompany the bills. As a result, hospitals have added additional employees to their billing departments to perform manual tasks. For example, one hospital has added 15 new employees to assist in the collection of managed care revenues.

¹Carve outs provide hospitals with a higher level of reimbursement for certain high cost procedures than the hospitals would receive for most other procedures.

Utilization Control

Many of the 17 hospitals have also added additional employees to oversee utilization control activities required by managed care.² Hospital admitting departments obtain precertification for managed care enrollees before performing certain procedures, providing certain treatments within specified time frames, or initiating procedures costing more than set dollar thresholds. Frequently, hospitals must obtain recertification for patients when, for example, length of stay exceeds a specified number of days. To obtain recertification, hospital personnel must determine when managed care contracts require such actions, identify the payer representative authorized to certify or recertify, and prepare associated documentation. Hospitals face substantial financial risk for these managed care utilization controls. One hospital official informed us that his hospital incurred over \$1 million in unreimbursed costs during 1993 due to failure to obtain precertifications or recertifications for patients prior to delivering care.

Contract Management

Sixteen of the 17 hospitals have added personnel or created entirely new departments to handle managed care administration. These departments are responsible for tasks such as managed care business development, contract pricing strategy formulation, contract modeling, contract negotiation, performance evaluation, contract administration, and contract renegotiation. For capitated managed care contracts, hospitals are incurring additional costs for actuarial support and risk pool management. One hospital staffs its managed care department with 30 employees.

Hospitals Employing Methods to Cut Costs

Fourteen of the 17 hospitals are taking actions intended to reduce administrative cost increases associated with their managed care business. The following are specific examples of the steps they are taking.

- Six of the 17 hospitals reported attempting to reduce costs associated with unique payer billing requirements by contracting with all payer electronic billing companies for assistance. These companies apply payer-specific computer edits and filters to hospital bills to identify those that are prepared in a manner inconsistent with specific government and commercial payer requirements. Hospitals add, delete, or correct information on the identified bills before submitting them to the payers. One hospital spends more than \$100,000 annually on such contracts, but officials stated that they save more than that amount by reducing administrative staff and improving collection time.

²Some hospital and industry officials stated that expenditures on utilization controls, while increasing administrative costs, could decrease overall hospital costs by reducing unnecessary utilization.

- Thirteen of the 17 hospitals reported attempting to minimize costs by automating more administrative functions associated with billing and collecting, utilization control, and contract management.
- Officials from 7 of the 17 hospitals stated that their hospitals have minimized the need for additional contract management personnel by consolidating their activities with those of other hospitals in their service network.
- Four of the 17 hospitals reported making efforts to reduce contract administration and billing costs through contract standardization.

Obstacles to Attempts to Control Cost Increases

Several factors limit the success of hospital attempts to control administrative cost increases resulting from managed care. First, hospital officials stated that their hospitals cannot automate all billing and collecting because some managed care payers do not have necessary information systems and others do not represent sufficient revenues to make such efforts cost beneficial. Second, hospital officials stated that consolidation of administrative functions within service networks is slowed where, as in the case of 4 service networks involving 6 of the 17 hospitals we reviewed, member hospitals are independently owned. Third, hospital officials stated that some managed care payers enjoy leverage in contract negotiations because they represent a large number of potential patients. As a result, they successfully resist the hospitals' standard contracts in lieu of negotiating their own standard contract and forcing hospitals to conform to their requirements.

Information Systems

Hospitals Require Additional Cost and Clinical Information to Be Successful Managed Care Providers

Officials from several hospitals stated that the acquisition or development of cost and clinical information systems represents the largest single investment their hospitals will make during the next few years. As the 17 hospitals assume greater risk under managed care contracts that provide fixed reimbursement, they must be able to accurately track and assess direct and indirect costs by specific procedure and payer to avoid financial losses. Tracking costs by procedure is becoming critically important to the hospitals because inaccurate direct cost measurement or misallocations of overhead to specific procedures can cause the hospitals to pursue poor pricing strategies during contract negotiations. Tracking costs by payer is also becoming important to the hospitals because they need to accurately monitor financial performance during contract execution and be able to project future costs associated with specific payers.

For example, one hospital official stated that the hospital lost millions of dollars when it negotiated managed care contracts using cost data from a system that did not accurately track costs by procedure or payer. The hospital subsequently acquired a system that enabled it to analyze costs in this manner and found that certain procedures that appeared profitable under its old costing system had actually caused the hospital to lose money. Further, certain procedures that management had deemed unprofitable with data from the old system actually made money for the hospital. Management used the new system to change its pricing strategy, renegotiate the hospital's managed care contracts, and monitor contract performance. The hospital currently experiences positive margins on its managed care business.

To successfully compete for managed care contracts, the 17 hospitals are recognizing that they must have adequate clinical information to ensure treatment quality. As the hospitals work with physicians to standardize practice patterns to improve quality and reduce costs, they are exploring ways to generate clinical information that associates practice changes with variations in patient outcomes. In addition, to develop and monitor clinical pathways that do not compromise patient outcomes while minimizing costs, the hospitals are investigating methods to develop clinical information that correlates the sequence and amount of nursing and other types of care with patient outcomes. Regarding outcomes, the hospitals are studying ways to provide clear clinical indicators about the effectiveness of specific treatment from the standpoint of the physician, patient, and the patient's employer. For example, physicians that we spoke to informed us that outcome information pertaining to surgical success rates, surgical complications, and infections are important to demonstrate

quality. Patients are often concerned about their functional status and well-being after treatment, and employers about their employees' recovery time and productivity at work.

Most of the hospital officials stated that their hospitals need to upgrade their cost and clinical information systems for managed care and have either begun to develop, acquire, or research better systems. Currently, four of the hospitals are relying predominantly on cost information systems that allocate costs to departments rather than to specific procedures. Officials of three of these hospitals told us that they are currently bidding on managed care contracts without knowing whether the contracts will generate positive margins. Further, six of the hospitals could not provide margins by specific payer. Regarding clinical information, several of the hospitals are not currently using automated information systems to track physician practice patterns, monitor clinical paths, and report outcome data.

Health Care Service Networks Compound Hospital Information Needs

As most of the 17 hospitals develop service networks with other hospitals and physician organizations, they are searching for ways to develop additional cost and clinical information to reduce financial risk and ensure treatment quality. Because the hospitals and members of their service networks will contract together with insurers and employers to provide comprehensive health care, they are exploring methods to integrate their cost and clinical systems. The integrated systems will need to enable the hospitals and other members of their service networks to analyze cost and clinical information on an "as needed" basis and initiate timely corrective action to control costs and improve treatment quality across their patients' entire continuum of care, including care provided in inpatient hospital settings, subacute care settings, outpatient centers, and primary care clinics.

To manage their patients in a cost-effective manner and avoid losing track of their patients' status, the hospitals and members of their service networks are evaluating ways to maintain integrated and comprehensive clinical records about their patients. The master patient index and the electronic medical record are examples of key components of comprehensive clinical records. The master patient index keeps track of every encounter a patient has with the hospital and other members of its service network. The electronic medical record tracks treatment provided at various stages of care which helps the hospital and members of its

service network to coordinate care and reduce duplicate testing and service delivery.

Limitations to Implementing Information Systems

The high cost associated with comprehensive cost and clinical information systems and the time required to implement such systems may prevent the 17 hospitals from upgrading their systems before managed care represents a significant portion of their business. Several examples follow.

- One large hospital, which has already spent between \$25 million and \$35 million upgrading various information systems and spends about \$2.5 million a year operating them, has developed a 5-year plan for its clinical information system. The hospital expects to spend approximately \$20 million over the next 5 years upgrading its clinical system and has scheduled completion of the phase-in of patient computerized medical records for 1998. Currently, the hospital has 20 managed care contracts. Hospital management predicts that managed care will be the hospital's largest commercial revenue source within the next year.
- An official of a second hospital stated that the hospital's biggest investment over the next few years will be information systems. The hospital estimates that it will spend over \$46 million over 3 years developing, acquiring, and implementing a system that will combine cost, patient outcome, and clinical data. Key components of the system including the master patient index and the electronic medical record are not scheduled to be fully implemented until late 1997. Currently, managed care contracts are responsible for 26 percent of the hospital's revenues. According to a hospital official, the hospital expects to have virtually no commercial fee-for-service business in 5 years.
- A third hospital is currently assessing its need to meet emerging managed care information requirements. Its initial estimates for upgrading over 40 systems that were designed for fee-for-service business are about \$45 million for clinical systems and about \$18 million for cost systems. The hospital expects to upgrade its systems over the next 4 to 5 years. Hospital officials stated that managed care will represent the primary source of commercial revenue by fiscal year 1994.

In the near future, hospitals that do not have comprehensive information systems that provide critical cost and clinical data may have difficulty obtaining profitable managed care contracts. The loss of profitable managed care business could impede the hospitals' development and implementation of comprehensive information systems, which would further compromise their positions as viable managed care providers.

Professional Liability

Hospitals Could Not Measure All Liability Costs

None of the 17 hospitals could quantify all costs related to professional liability. Hospital liability costs include self-insurance funding, catastrophic insurance coverage, risk management, legal expenses, damages awarded, and defensive medicine. Although hospital and industry officials believed that defensive medicine is a significant liability-related cost hospitals incur, they could not effectively segregate defensive medical practices from prudent practices or measure costs associated with purely defensive practices. In addition, most hospital officials stated that their hospitals engage in risk management activities to reduce liability related cost. The hospitals, however, do not segregate risk management activities which are designed to reduce professional liability from activities which are designed to promote quality assurance and compliance with accreditation standards. Several hospital officials and industry experts stated that some staff time must be devoted to researching medical records and providing depositions after malpractice claims are filed. None of the hospitals could attach dollar amounts to these activities.

Measurable Liability Costs Increased at Some Hospitals, Decreased at Others

The 17 hospitals were able to quantify costs associated with liability insurance premiums, self-insurance funding, legal fees and salaries, settlements, and/or claims paid. The amounts and trends provided by the hospitals for these liability costs varied greatly. Seven hospitals reported that these measurable liability costs were increasing, while 11 hospitals reported that they were decreasing or had not changed. The 17 hospitals' reported liability costs as a percentage of total annual operating expenses in 1993 ranged from less than 1 percent at one hospital to over 7 percent at another.

Limited liability for public hospitals, differences in the types of treatment hospitals provide, and large one-time settlements account for some of the variation in the hospitals' liability costs. Texas' Civil Practice and Remedies Code limits liability for hospitals which are units of local government to \$100,000 per individual and \$300,000 per occurrence but does not similarly limit the liability for profit and not-for-profit hospitals. One public hospital's liability costs have risen steadily in recent years. However, hospital officials reported that without liability limits, a much larger portion of the hospital's budget would be required to cover liability costs. The type of services hospitals provide also affect liability costs. For example, one hospital experienced a dramatic increase in its annual self-insurance contribution from \$259,650 to \$1,793,304 after it began offering obstetric services, a high-risk service. Large one-time settlements can also cause significant variations in the hospitals' liability costs. For

example, one hospital's liability-related expenses rose by over 440 percent from 1992 to 1993 as a result of one multimillion dollar loss.

Hospitals Attempting to Minimize Liability Costs

The 17 hospitals are attempting to minimize liability costs by self-insuring,¹ employing risk management programs, or more closely screening prospective employees and physicians. Most of the hospitals self-insure for professional liability because trust fund contributions to cover potential awards² are relatively small compared to the cost of commercial insurance. Hospital officials stated, however, that they also purchase commercial insurance umbrella policies to cover catastrophic damage awards over their self-insurance coverage. To minimize the risk of potential claims, some of the 17 hospitals are intensifying risk management programs to research and follow up on patients after a negative incident occurs. Risk management efforts also help hospitals settle some claims without going to trial, which often results in the hospital paying less to cover damages. To minimize the risk of adverse outcomes before they occur, several hospitals started screening prospective physicians and allied health employees more closely to ensure that they do not credential physicians who have a history of medical malpractice or hire employees who have exhibited problem behavior that could increase the hospitals' liability costs.

Hospitals Face Obstacles in Controlling Liability Costs

One obstacle hospitals face in controlling liability costs is their inability to control the rising number of claims. According to a 1994 study prepared by the Texas Medical Association and Tonn and Associates,³ the percentage of Texas physicians that were sued or subject to a liability claim rose from 10.8 percent in 1988 to 14.4 percent in 1992. The study also found that Tarrant and Harris counties, where 11 of the 17 hospitals are located, were among the Texas counties with the highest claims frequencies. In 1992, for example, 15.9 percent of physicians in Tarrant county and 14.7 percent in Harris county had at least one claim filed against them. Because plaintiffs have successfully argued that Texas hospitals can be responsible for the

¹Hospitals self-insure by contributing amounts to trust funds based on the expected future settlement costs of open claims.

²Trust fund contributions are based on liability costs from previous years, then adjusted for contingencies.

³Medical Professional Liability: An Examination of Claims Frequency and Severity in Texas, February 1994.

negligence of physicians practicing in their facilities,⁴ hospital officials stated that plaintiffs can also file claims against hospitals when they file against physicians. Of the 17 hospitals, 4 reported an increase in liability claims.

Another obstacle identified by several hospitals to controlling their liability costs is physician underinsurance. According to Texas Hospital Association data, most Texas hospitals perceive physician underinsurance as an obstacle to controlling liability costs. Hospital officials stated that physicians carrying insufficient liability coverage put hospitals at risk of becoming “deep pockets” in malpractice claims. For example, 1 of the 17 hospitals we visited was a co-defendant in a malpractice suit involving two of its physicians where the plaintiff was seeking large damages. The two physicians settled out of court for the limits of their professional liability coverage, leaving the hospital as the sole defendant for the remaining damages in the case.

Effect of Managed Care on Costs Is Unclear

Officials of the 17 hospitals expressed mixed views on the effect of managed care on hospital liability costs. Some hospital officials stated that managed care could increase malpractice claims and related costs if hospitals inappropriately shorten patients’ lengths of stay or reduce treatment. In addition, hospital officials noted that because managed care enrollees sometimes change primary care physicians, the continuity of patient care is sometimes interrupted. These changes could result in an incorrect or incomplete transfer of the patient’s medical information from one physician to another. According to the hospital officials, patients are also less likely to sue a physician they have seen for years than a newly selected physician in a managed care plan. Conversely, other hospital and industry officials stated that managed care could decrease related hospital costs by curtailing defensive medicine practices. Physicians have been primarily reimbursed on a fee-for-service basis, which provides an incentive to increase treatment. However, as physicians and hospitals form service networks to compete for fixed reimbursement contracts, physicians have a financial incentive to minimize the number of defensive tests and procedures they perform.

⁴According to industry officials, in Texas, plaintiffs typically establish hospital liability through either the ostensible agency doctrine or by establishing hospital negligence in the selection and review of medical staff.

Regulatory and Accreditation Costs

Hospitals Subject to Numerous Regulations and Accreditation Standards

Numerous government agencies and accrediting bodies promulgate regulations and standards that are intended to achieve a variety of public health and workplace safety objectives, according to officials from the 17 hospitals. One hospital identified 18 regulatory agencies and accreditation bodies that impose requirements including federal agencies such as the Health Care Financing Administration and the Drug Enforcement Administration, state agencies such as the Texas Department of Health and the Texas Department of Agriculture, municipal agencies such as the city health department, and accreditation bodies such as the Joint Commission on the Accreditation of Healthcare Organizations (JCAHO). These government agencies and regulatory bodies require hospitals to engage in activities as diverse as performing fire and disaster drills, documenting many hospital activities, and compiling and filing data.

While all hospital officials agreed with the public health and workplace safety objectives of the government regulations and accreditation standards, officials from 12 hospitals stated that some requirements either did not effectively achieve the objectives or were unnecessarily cumbersome. For example, several hospital officials we visited cited the Occupational Safety and Health Administration's requirement that hospitals provide tuberculosis respirator masks to physicians and employees as a costly regulation that may not be effective in reducing the spread of tuberculosis. Officials from one hospital stated that the hospital would spend about \$500,000 in fiscal year 1994 to purchase the masks. Several hospital officials stated that many of the JCAHO accreditation standards cost thousands of dollars per year and do not improve health care delivery. Officials from six hospitals, however, stated that most requirements and standards are reasonable and would be performed in the absence of government agency and accreditation body mandates.

Few Hospitals Quantify Total Regulatory and Accreditation Costs

While officials from 9 hospitals stated that compliance costs were significant and increasing, none of the 17 hospitals routinely quantified and analyzed total annual compliance costs. All 17 hospitals provided costs associated with select compliance efforts such as the Medical Waste Tracking Act of 1988, which governs the management of infectious waste. However, most hospital officials stated that they did not collect aggregate compliance costs because of the associated expense and no perceived benefit.

Four hospitals estimated their annual regulatory and accreditation compliance costs for our review. The following table lists estimated

annual costs and costs as a percentage of fiscal year 1993 operating expense.

Table 1: Estimated Costs of Complying With Regulations and Accreditation Standards

Dollars in thousands		
Hospital	Fiscal year 1993 compliance costs	Costs as a percentage of operating expenses
1	\$1,049	0.6
2	1,427	2.5
3	2,424	5.6
4	5,365	3.7

Source: Unaudited information provided by the four hospitals.

These cost estimates include amounts for requirements that are not unique to the hospital industry. For instance, each hospital included compliance costs imposed by laws such as the Americans with Disabilities Act and the Clean Air Act, which are not specific to the hospital industry. Further, while officials from the four hospitals indicated that they would discontinue some activities in the absence of regulatory and accreditation requirements, their estimates do not represent costs that the hospital would not incur in the absence of those requirements. The estimate provided by Hospital 3, for example, included \$378,000 for quality improvement and utilization review. Hospital officials stated that they would continue most quality improvement and utilization review activities even in the absence of regulatory and accreditation requirements.

Hospitals Have Little Control Over Regulatory and Accreditation Costs

Hospital officials stated that they have little or no control over regulatory and accreditation compliance costs. The 17 hospitals have attempted to minimize compliance costs when possible by taking actions such as incinerating infectious waste or forming group purchasing cooperatives to obtain discounts from infectious waste disposal contractors. However, hospital officials stated that many costly regulations and standards result from the outbreak of diseases, technological developments, new professional standards, and other factors that are not subject to hospital control. For example, the outbreak of multidrug-resistant tuberculosis has triggered regulatory requirements for hospitals to construct negatively ventilated rooms and purchase more expensive filtration masks.

AIDS

Costs Associated With AIDS Patients

All 17 hospitals incur costs to comply with Centers for Disease Control guidelines intended to protect hospital employees and patients from acquiring infectious diseases such as AIDS, which are transmitted by exposure to bodily fluids. These guidelines, known as “universal precautions,” increase costs by requiring hospitals to purchase protective materials and train staff in risk-reduction methods. Five hospitals quantified annual costs associated with universal precautions, which amounted to less than 1 percent of the hospitals’ fiscal year 1993 operating expenses. Most hospital officials do not consider these costs to be AIDS-specific because they also protect employees and patients from other infectious diseases such as hepatitis B.

Because many AIDS patients lack insurance, revenue is a significant concern of hospitals treating large numbers of AIDS patients. During the past 4 years, over 60 percent of one public hospital’s AIDS population was uninsured. This hospital is reducing the number of uncompensated AIDS cases through vigorous Medicaid enrollment efforts. As a result of these efforts, the hospital’s uncompensated care for patients with AIDS decreased to 55 percent in 1994. Correspondingly, the number of AIDS patients receiving Medicaid increased from 17 to 30 percent.

Three of the Hospitals Treat Significant Numbers of AIDS Patients

Only 3 of the 17 hospitals—all public hospitals—treat a significant number of AIDS patients. One hospital reported that it treated more than 40 percent of its county’s AIDS patients at a cost of over \$22 million in 1993, which represented about 6 percent of its operating expenses. Another public hospital treats approximately 60 percent of the known AIDS patients in its county, which amounts to more than 4,000 patients annually. This hospital projects AIDS treatment costs of \$69 million by fiscal year 1999. The third public hospital could not quantify its AIDS-treatment costs because its cost accounting system does not segregate costs by medical condition. This hospital treats approximately 300 AIDS patients per month, which also accounts for a large percentage of its county’s AIDS population.

Inpatient Treatment Costs Are High

When the first cases of AIDS were diagnosed, the disease was treated primarily on an inpatient basis. Inpatient care is still typically required, especially during the last stages of the disease. However, the three public hospitals treat most of their AIDS patients in outpatient settings and residential treatment facilities, which are considerably less costly than inpatient care. Through discharge planning and case management programs, hospitals are coordinating with community resources such as

home health care and hospice arrangements to minimize AIDS treatment costs. One public hospital treats approximately 95 percent of its AIDS cases in outpatient facilities. Another hospital established its own AIDS outpatient clinics to cost-effectively treat its growing number of AIDS patients. The third hospital, on average, treats more than 80 percent of its AIDS patients in outpatient settings.

However, when inpatient care is required for AIDS patients, it is more costly than for patients with other medical conditions. AIDS patients often require longer lengths of stay, expensive drug therapy, and extensive laboratory services. For one hospital, the average length of stay for AIDS patients was 3 to 5 days longer than the average for patients without AIDS. The hospital's average cost per AIDS patient was \$8,628 as compared to the next most costly diagnoses with costs of \$6,035 per patient.

Inpatient Costs May Rise

The three public hospitals may have difficulty controlling future AIDS-related costs because of the changing demographics of the recently diagnosed AIDS population. According to one hospital official, a growing percentage of his hospital's cases involve women and children, who currently have limited access to community AIDS services such as medically managed day care and residential care. According to the official, a large network of alternative AIDS treatment settings is currently available for homosexual males, but similar networks do not exist for other populations. Unless additional alternative AIDS treatment settings are established, the hospitals may have to keep these patients hospitalized longer because they may not be able to discharge them to appropriate residential settings in the community.

Major Contributors to This Report

Accounting and
Information
Management Division,
Washington, D.C.

Gloria Jarmon, Senior Assistant Director

Dallas Regional Office

Ken Rupar, Regional Management Representative
Russell E. Hand, Auditor-in-Charge
Claudine Scontrino, Evaluator
Dorothy Tejada, Computer Specialist

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