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**THE FINAL EVALUATION REPORT ON THE
1989 GRANT PROGRAM FOR RURAL
HEALTH CARE TRANSITION**

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EXECUTIVE SUMMARY

I. INTRODUCTION AND OVERVIEW

Rural hospitals face a number of problems that threaten their survival. The hospitals tend to be financially weak--generally losing money on hospital operations. They are often unstable institutions--small staff losses can affect a hospital's ability to serve some portion of its patients and weaken its financial condition. And they face a shortage of primary care physicians willing to work in rural areas, without whom the hospitals cannot survive.

In response to these problems, Congress introduced the Rural Health Care Transition grants program to improve the financial and managerial capacity of small rural hospitals. This evaluation of the first cohort of 181 grantees shows that the grant projects did not improve grantees' financial status, however. The smallest hospitals (those with fewer than 30 beds) were the least likely to benefit from the grant program. Case studies of 44 grantees documented that 13 grantees were unable to implement their projects as planned--primarily because physician staffing **problems** thwarted them. Those that did implement projects improved local access to specific services, particularly outpatient services.

Congress Established the RHCT Grants Program.

Congress introduced the Grant Program for Rural Health Care Transition in 1989 (Omnibus Budget Reconciliation Act of 1987, Public Law 100-203) and later expanded the program (Omnibus Budget Reconciliation Act of 1989, Public Law 101-239). This program awarded nonproprietary, non-Federal rural hospitals with fewer than 100 beds grants of up to \$50,000 a year for 3 years. Congress intended that the grants be used to help these hospitals become more financially and managerially sound, and to continue to provide access to health care in rural areas. Congress mandated that the program be evaluated within 6 months of its conclusion.

The first cohort of 181 **hospitals** received Rural Health Care Transition grants in September 1989; further awards were made in 1990, 1991, and 1992. Over 90 percent of the first cohort stayed in the program for the full grant period, introducing a variety of new services, at a cost to the Federal government of \$20.7 million. This evaluation report describes the 1989 grantees' projects and their financial and managerial performance in the years before and after they received the grants.

The Grantees Started the Program Small and Financially Weak.

The grantees, which were located in areas much like the areas of all hospitals eligible for the grant program, were all very small hospitals and generally financially weak. Three-quarters had 60 or fewer licensed acute care beds, and one-third had 30 or fewer beds. Three-quarters had already tried to improve their financial status by converting excess acute care beds to swing beds. Their licensed acute care bed occupancy rate was low (median of 28 percent). Consistent with this low occupancy rate, the grantees' financial performance in the year before the grants were awarded was poor.

II. EVALUATION METHODOLOGY AND FINDINGS

Legislative Objective: Grantees to Improve Financial and Managerial Capacity.

Congress stipulated that the grants be used to improve the financial and managerial capacity of the grantee hospitals through a variety of approaches. Accordingly, we evaluated whether the hospitals' financial and managerial performance improved. For the grant projects to cause any improvement in finances, the grantees must first implement their projects, and then increase service utilization and earn a profit from the services provided. Therefore, we also examined at the individual hospital level whether the projects were implemented, whether the new services were utilized, and whether the projects were financially self-supporting by the end of the grant period.

Even if all the individual projects are judged successful by our criteria, the **RHCT** program will not necessarily have helped individual rural communities or rural communities as a whole. For the program to have **helped** rural communities, the projects must have improved access to health care in the community--not just improved utilization at a particular hospital. **This** evaluation was not designed to **address** the issue of whether the communities with grantees were helped by this program, or whether the program helped rural communities nationwide. But we do present information in this report on new physician recruits and local providers that sheds light on some of these issues.

This evaluation uses a trend analysis of all the grantees to determine whether the RHCT grants program improved the grantee hospitals' finances and utilization, and a **pregrant/postgrant** comparison to determine if the grants improved hospital management. To analyze whether individual projects were successful, the evaluation employs a descriptive analysis of whether the projects **were** implemented, using case-study data. This analysis also examines whether the implemented projects were used by the community, and whether these projects were financially self-supporting at the end of the grant period, using data from all of the grantees. It is important to remember that the flexibility of the program permitted many

different types of projects. As a consequence, many results are based on only a few observations and should be interpreted cautiously.

The evaluation draws on data reported by the grantees every 6 months throughout the **3-year** period of the grant **program** and on case studies of 44 (one-fourth) of the grantees. We selected the case study grantees to reflect the geographical distribution of the grantees across the country and to include disproportionately grantees that were more likely to implement their projects.

Despite Significant Problems Implementing Some Types of Projects, Grantees Implemented a Wide Range of Projects.

Grantees experienced problems in implementing their projects, according to the case studies. Despite their best efforts, 13 of the 44 case studies (29 percent) had significant implementation problems **and** either abandoned their projects completely or never implemented major objectives. About one-third of the case-study grantees successfully implemented their projects as intended and will retain them after the grants end, because their projects are now financially self-supporting. About 37 percent fell between these extremes, achieving partial success with implementation. The most common reasons for failing to implement projects were disagreements or lack of coordination within a hospital or with other providers, and difficulty recruiting and retaining physicians, which either held up implementation or diverted attention from the grant project.

The grantees that did implement their projects accomplished a wide range of activities, including strategic planning, recruiting physicians, and introducing or upgrading a wide range of services. The 143 grantees completing 3 years of the grant program added 125 outpatient services, 76 patient support services, 30 inpatient services, 27 home health agencies, 26 emergency room renovations, and 20 routine and emergency transportation services using grant funds. Case studies of one-fourth of the grantees show that one-third would have introduced these services without the **grant**, but two-thirds would not have introduced the services as soon, as completely, or perhaps ever.

The case studies also showed that some types of projects were less likely to be implemented (adult day care, child day care, and Federally qualified Rural Health Clinics). Furthermore, very small hospitals (those with 30 or fewer licensed beds) were less likely than large ones (those with 60 or more licensed acute care beds) to implement their projects as planned and to achieve project self-sufficiency by the end of the grant period.

Local Access to Specific Grant-Funded Services Increased, But Overall Hospital Utilization and Services Offered Were Unaffected.

Although grant funding produced a variety of new **services** that patients generally used, our trend analysis showed that overall hospital utilization and services offered by 146 grantees were unaffected by the grant program. After the grants were awarded, the grantees* overall inpatient utilization decreased 16 percent and outpatient utilization increased 8 percent, much like they did in the rest of the country.

The grant-funded outpatient services and patient support projects were the most heavily utilized. Grant-funded Rural **Health Clinics (8)**, primary care clinics **(15)**, and mobile health clinics (4) received an average of 461, 559, and 510 patient visits a month at the end of the grant period, respectively. Grant-funded outpatient surgery clinics had low use, an average of only six procedures per **month**. The case studies showed few referrals from physicians or other health care providers to **pulmonary** rehabilitation services and an inpatient ventilator dependent unit supported by the grant.

Of the 304 services implemented with grant funds by 132 grantees, 193 (63 percent) were financially self-supporting at the end of the grant period and, with some significant exceptions, most grantees planned to retain them. Grantees reported that 70 percent or more of the implemented inpatient, outpatient, home health, and emergency room or emergency transportation grant-funded services were self-supporting by the end of the grant period. They also indicated that these services would be retained (with the exception of one inpatient psychiatric unit that was not financially self-supporting). Far fewer grant-funded routine transportation and patient and community education services were financially self-supporting at the end of the grant period (**20 percent**). Furthermore, 8 percent of all the patient support **services** projects were completely discontinued after the grant (four patient education and two adult day care projects).

Inpatient admissions decreased and outpatient **services** increased at rural hospitals nationwide between 1987 and 1991. One of the purposes of the grant program was to help grantees keep up with the trend in **outpatient** care. In large part, the grantees' experience mirrored the nationwide experience for outpatient services. Their inpatient admissions also decreased over the grant period, and relatively few grantees introduced inpatient services that might have increased admissions. Outpatient service use increased during the grant period among grantees, consistent with the large number of outpatient services added, courtesy physician staff recruited, and the nationwide trend. How many of the grantees* new programs or enhancements would have been added without the grant program is unclear. Because the grantees had poor financial performance before the grant awards, it is possible that without the grant program they would have made fewer such additions.

2 In addition to changes in use of inpatient and outpatient services during the grant period, the availability of therapeutic services provided by grantees also increased. Some of this increase resulted from grant-funded increases in the number of physical and occupational therapy staff and the addition of home health agencies.

Availability of emergency room services stayed the same during the grant period, but access to physicians in the emergency room improved. This was partly due to the increase in the number of hospitals using contracted physician services to staff emergency rooms (reflected to some degree by the increase in courtesy physician staff over the period).

Access to some posthospital services (home health and Medicare-certified nursing homes) improved over the grant period. This 'was only partially attributable to the grant projects, because only 3 of the 27 grantees introducing a home health agency and 3 of the 7 grantees introducing Medicare-certified skilled nursing beds had experienced a problem accessing these services before the grant was **awarded**.

Finally, access to routine medical transportation improved slightly over the grant period. It is impossible to say whether the grant program was responsible for any of this increase.

Grantees Recruited Physicians,, but These Efforts Did Not Increase Regular Physician Staff.

The physician recruitment projects funded by the grants did not overcome the physician shortage problem. Grantees **were** no more effective at recruiting regular physician staff with the grants than with hospital financial resources. More grantees lost physicians from their regular staff than gained physicians during the grant period. Overall, 64 physicians were recruited with grant funds, but 11 percent had stopped practicing in the grantee area by the end of the 3-year grant program. Forty-four percent of the **newly** recruited physicians were recruited from other rural **areas**, suggesting that while grantee hospitals were helped by the program, it may have been at the expense of other rural hospitals.

Although the grantees failed to increase their regular staff, they did increase courtesy physician staff by 30 percent. The increase in courtesy staff is attributable to a number of factors, including the increased use of contract physicians to cover emergency rooms and the increase in the number of hospitals offering part-time specialty clinic services.

The Grant Program May Have Improved Quality.

The grantees showed improvements in structural measures of the quality of care over the grant period, such as age of the physical plant and laboratory equipment, and levels of personnel training. Given the limit on capital expenditures imposed by the legislation, few of the capital improvements grantees described were directly attributable to the grants.

A few grantees selected and implemented projects with quality improvement as an immediate objective. For example, one grantee upgraded ancillary services by purchasing equipment and training laboratory and x-ray staff, and a two-hospital consortium introduced a quality assurance program using a commercially available Total Quality Improvement system.

Hospital Finances Were Unaffected by the Grant Program.

As expected, there were no changes in long-term trends in inpatient revenue or outpatient revenue for all grantees. However, three financial measures improved after grant award: operating margins, the ratio of patient service revenue to working capital (a measure of **short-run** financial management and productivity), and the average age of physical plant (except among the smallest hospitals). Rural hospitals nationwide improved their operating margins at a faster rate than grantees over the same period, so the role of the grant program in improving operating margins was probably small.

Because the grants are a larger proportion of the smallest hospitals' revenues, they might have had the greatest effect on the smallest hospitals. By all measures, the smallest grantees (those with fewer than 30 licensed acute care beds) had much more severe financial problems before the grants were awarded, and these trends either were not noticeably affected after the grant award (outpatient revenue) or they got worse (inpatient revenue and ratio of patient service revenue to working capital). This pattern indicates that, contrary to our expectations, the smallest hospitals showed the least evidence of being helped by the grant program.

Management and Grantee Morale Improved Slightly.

A review of several indicators of managerial performance and structural measures of management showed some improvements after grant award. Self-reported patient migration to other hospitals declined, staff turnover slowed, and the number of days in net accounts receivable improved (unlike rural hospitals nationwide, the grantees* performance on this measure did not worsen). Whether these effects resulted directly or indirectly From the grant program, **from** the actions of new administrators (half the grantees had at least one change in administrator during the grant period), or from changes in the economy cannot be determined.

Most grantees thought the grant projects had important intangible effects on the hospital. For example, some cited **improvements** in communication with other providers that resulted from implementing new services. Others said hospital staff had been given a morale boost by winning the grant award. Others believed the hospital's image had improved because of the grant award or outreach provided by grant-funded community education programs.

There is little evidence to document that the grant projects actually had these effects. Many health care providers located near the grantees, who were interviewed during case-study site visits, had either never heard of the grant program or were not sure of the nature of the grant-funded activity.

The Grant Program Failed to Induce Conversion or Consolidation.

Only one grantee consolidated with another institution, and four institutions converted to another type of health care institution during the 3-year grant period, even though 67 grantees started the program with an acute care occupancy rate of less than 25 percent. The four grantees that planned their conversion as part of the grant program continued to provide primary care and other **services**. The financial status of these institutions improved after conversion--all lost less money in the year following conversion. In total, eight grantees closed during the **3-year** period, which is equivalent to an annual closure rate of 1.5 percent (a rate comparable to the national rate for rural hospitals).

Grantees gave scant consideration to options like consolidation or conversion at the time of grant award, when most indicated that they planned to continue as **full-service** hospitals. Subsequently, even fewer grantees seriously considered consolidation or conversion. Unexpectedly, grantees with the lowest occupancy rates were the least likely to consider these options. Case-study grantees pointed out that consolidation was sometimes considered, but the barriers to achieving consolidation are considerable; it requires different types of owners to coordinate and involves **legal** restrictions.

III. OBSERVATIONS ABOUT THE GRANT PROGRAM

The Grant Program Does Not Address Fundamental Problems Facing Rural Hospitals.

The grant program cannot **fix** the fundamental problems facing small rural hospitals. These hospitals tend to be financially weak and lose money on operations. A number of underlying factors cause this financial weakness--high proportions of uninsured patients in their service areas, low demand for **services** due to changes in medical practice and patient out-migration, and the high costs of providing emergency care in low volume. Rural hospitals also tend to be unstable institutions **because** of their small size--losing one staff member can make

a hospital incapable of serving some portion of its patients and weaken its financial condition. In many cases, a rural hospital's entire department consists of one staff member. And rural hospitals face a shortage of primary care physicians willing to work in rural areas, without whom the hospitals cannot survive.

Rural hospitals can surmount these problems with strong leadership. Some small rural hospitals have strong leadership and are financially solid. But the grant program cannot buy strong leadership. Awarding grants to hospitals with weak leadership may result in poor project choices or problematic implementation of a project. The smallest case-study hospitals, which tend to have the most difficulty attracting good managers, had the poorest project implementation rate. The leadership problem must be resolved at the local level.

The grant program cannot solve rural hospitals' predominant problem—the shortage of primary care physicians in rural areas. A large part of grant funds was spent on recruiting physicians, particularly primary care ones. Because 55 percent of the generalists recruited came from other rural areas, rather than residency programs or relatively better-stocked urban areas, the grant program may have contributed to a net improvement in physician incomes and satisfaction, but its net effect on physician availability in rural areas was small. Providing funds to hospitals to recruit physicians when there are not enough physicians to meet their needs can create more turnover in the available supply of physicians, but it cannot increase that supply. The recruitment and retention of rural primary care physicians will be a persistent problem until the supply problem is addressed.

The Evaluation Offers Lessons Learned About the Grant Program.

The first cohort of Rural Health Care Transition grantees completed their **3-year** projects in September 1992, at a cost to the Medicare Trust Fund of \$20.7 million. From a programwide perspective, little evidence supports measurable changes in hospital finances or managerial capacity as a result of these projects. This is not surprising given the relatively small size of the grants and the challenges rural communities face. From a perspective focused more on individual hospital impacts, some positive signs exist. Among the approximately two-thirds of hospitals that have implemented their projects, the majority provide services to patients who might have otherwise gone without or had to travel to receive services. The majority of these hospitals are also breaking even or making money on their projects and plan to retain them in the future, thus improving access over a longer period.

The problems rural hospitals face affect the capability of some individual hospitals to implement their projects successfully. It is worth noting that certain types of projects had a higher success or failure rate than others. Adult day care was one of the least likely services to be implemented (neither of the two case-study grantees choosing adult day care implemented it because of construction financing difficulties). If implemented, it was one of

the most **likely** projects to be abandoned after the grant period, because of low revenue. Patient services such as community education programs were fairly easy to implement but were among the least likely to be retained after the grant ended, because they cost more than they produce in direct hospital revenues. (Only 8 of the 39 education projects were financially self-supporting at the end of the program.) Outpatient, home health, emergency rooms, and emergency transportation were most frequently implemented and were most likely to be continued after the grant **funding** ended.

Other projects had the potential to be successful but were very difficult for a single hospital working on its own to implement. For example, Rural Health Clinics were hard to implement (only one of six case-study grantees planning a Rural Health Clinic actually implemented one), but the **eight** grantees that implemented them plan to keep them after the grant period. The hospitals that were able to resolve their implementation problems usually had help either from a consultant, another hospital, or a multihospital system. Grantees also needed assistance in meeting the billing requirements of their Medicare carriers or intermediaries in order to be reimbursed for newly implemented grant-funded services, such as home health care. Again, these problems can be resolved more quickly by networking with other providers or health care system experts.

These lessons and observations about the grant program may help future grantees choose from the choices that confront them. However, the grant program will only be a partial remedy to the problems of rural communities for sustaining a viable system of health care.

I. INTRODUCTION

Congress introduced the **Rural Health Care Transition (RHCT)** grants program in 1989 to help small rural hospitals address their financial and management problems in order to maintain or improve access to care in rural communities. This report evaluates the impact of the 3-year grants on rural hospitals that received grants in September 1989. In this chapter, we describe the problems rural hospitals faced as the 1990s began and the expected effects of the grant program on the grantees.

A. PROBLEMS SMALL RURAL HOSPITALS FACE

Rural hospitals as a group have never been as financially sound as urban hospitals. The Hill-Burton program provided a source of capital funds that enabled many rural communities to build hospitals, but these institutions were financially weak. Their small size made them economically marginal, and their rural locations made it difficult for them to attract and retain health care professionals. Furthermore, a high proportion of their patients were uninsured.

The advent of the Medicare program and its cost-reimbursement system helped stabilize the financial condition of many rural hospitals, although many were financially distressed even with cost reimbursement (Kelly and O'Brien, 1983). Despite their financial instability, rural hospitals became focal points for health service delivery in rural areas as well as significant economic factors in local economies (Christianson and Faulkner, 1981).

During the 1980s a number of forces converged to increase the financial pressures on rural hospitals. First, Medicare changed its inpatient payment method from reimbursement of costs

to prospective payment. This change, along with accompanying changes in health care practices, substantially decreased inpatient acute care revenues. Second, rural areas have had continual problems recruiting and retaining physicians, so they have had to spend increasing resources on recruiting physicians or risk closure. Third, demographic shifts and the declining rural economy have decreased the demand for hospital services in many rural areas, increasing financial pressure on hospitals. Fourth, because of improvements in highways and the reputations of large, urban hospitals for providing high-quality, technologically advanced specialty care, rural residents often bypass local hospitals in favor of larger urban institutions. Initially weak finances, problems inherent in small size, and weak management have made it difficult for rural hospitals to respond to recent changes in the health care environment. These factors have often resulted in inadequate investment in capital and inadequate development of new services that would allow hospitals to maintain financial viability. The combination of these problems exacerbated the rural hospitals' financial distress, and the annual number of rural hospital closures increased from 4 in 1980 to 32 in 1988 (Hart, Pirani, and Rosenblatt, 1990).¹

The problems of rural hospitals have been discussed at length in the literature (Mick and Morlock, 1990). We summarize the problems again here, however, to establish the types of issues the **RHCT grant program** was designed to address.

¹There is considerable controversy over the definition of hospital closure, because some closed hospitals combine with other hospitals or subsequently reopen (Government Accounting Office, 1988). The closures identified here are permanent closures.

1. Changes in Medical Practice

Nationwide, the number of hospital admissions and the average length of hospital stays have decreased substantially during the last decade. Diagnoses for which admission rates and lengths of stay have decreased most substantially--adult pneumonia, adult gastroenteritis, and angina--are diagnoses that rural hospitals tend to serve more often (Codman Research, 1990). Decreases in hospital admissions and lengths of stay have been greater for rural hospitals than for urban hospitals, resulting in a 8.2 percent drop in occupancy rates for rural hospitals between 1984 and 1988, versus 4.3 percent for urban hospitals (Office of Technology Assessment [OTA], 1990, p. 112). The larger decrease in utilization for rural hospitals has made them even more financially fragile, compared to their urban counterparts.

During the same period, outpatient utilization increased substantially, counterbalancing the decrease in inpatient hospital utilization. From 1984 to 1988, outpatient visits to rural hospitals increased by one-third, while emergency room visits increased by 13 percent and outpatient surgical procedures increased by 89 percent (OTA, 1990, p. 123). Not all rural hospitals, however, made these adjustments in the locus of care. Only 56 percent of the small rural hospitals had organized outpatient departments in 1987, although 91 percent had ambulatory surgery facilities (OTA, 1990, p. 123).

Small rural hospitals responded slowly to the changes in medical practice for a number of reasons. Some hospitals were financially distressed before the changes, leaving management with few financial resources to respond to change (see Section 7). For example, some smaller hospitals were already minimally staffed for inpatient care and were unable to reallocate

resources to outpatient care when demand decreased. Financially weak hospitals also could not afford new technology that would help them transfer some surgical procedures from inpatient to outpatient settings. Finally, some hospitals were inadequately managed and either did not recognize the necessity for change or did not know how to respond effectively.

2. Inability to Recruit and Retain Health Care Professionals

The number of health care personnel grew significantly through the 1980s, proportionately outpacing the population growth (Health Resources and Services Administration, 1990). Despite this growth, in 1988 there were still 1,307 rural primary care Health Professional Shortage Areas and 111 rural counties without a physician (OTA, 1990, p. 293). The shortage of health professionals in rural areas is a major problem for rural hospitals. Without doctors, there are no patients. Without an anesthesiologist or nurse anesthetist, there is no surgery. Without laboratory technicians, diagnostic capacity is limited. And the list goes on. Rural hospitals can deliver some health care services without equipment, but they cannot deliver services without health professionals.

The need for physicians has led to fierce competition in recruiting. One study showed that 87 percent of America's 5,000 hospitals are recruiting physicians (Tully, 1992). This competition has led hospitals to offer recruitment inducements to physicians (for example, guaranteed incomes, relocation expenses, free or reduced-rent office space, and interest-free loans), as well as spend tens of thousands of dollars on recruitment firms, videotapes, and other recruitment devices. This type of investment can be substantial for a financially weak hospital. Yet, a small rural hospital has to make the investment--anecdotal data suggest that

rural hospitals are closing because of the lack of physicians (Friedman, 1990; Cheh, et al., 1990; Morrissey, Kletke, and Marder, 1991).

Even if a physician is recruited to a rural area, recent evidence suggest that his or her tenure may be short. From 1983 to 1988, 25 percent of rural physicians in counties with fewer than 25,000 people left (Kindig, Schmelzer, and Hong, 1992). Only 40 percent of the physicians who were practicing in subsidized, rural primary care organizations were still practicing in a rural area 8 years later (Pathman, Konrad, and Ricketts, 1992). Physicians cite long work hours, heavy call schedules, professional isolation, and low pay as the reasons for their job dissatisfaction (OTA, 1990, p. 315).

3. Economic Stagnation and Demographic Shifts

During the 1980s the economic growth enjoyed by the country as a whole was not enjoyed by rural America. While employment in the United States increased by 1.8 percent annually from 1980 to 1988, employment in sectors key to rural areas declined. Mining employment fell 4.3 percent, petroleum and coal employment fell 2.5 percent, and agriculture fell 0.6 percent (U.S. Bureau of the Census, 1991). In contrast, the sectors that enjoyed the highest employment growth rates--personal services, computer services, and legal services--are typically located in more urban locations.

This decrease in employment opportunities had significant effects on both the rural population composition and the population's ability to pay for health care services. During the 1980s, the metropolitan population grew 11.6 percent, while the nonmetropolitan population grew only 3.6 percent. The rural population now has proportionately fewer

residents of working age--57.6 percent of the nonmetropolitan population in 1987 was between 18 and 65 years old, in contrast to 61.5 percent of the metropolitan population. The elderly population increased nationwide by 3 percent between 1980 and 1990 (U.S. Bureau of the Census, 1992, p. 38).

The ability of the rural working population to pay for health care services has diminished. Between 1980 and 1987 the percentage of residents under age 65 who were below the poverty level grew from 14 percent to 18.4 percent (Rowland and Lyons, 1989). Forty-one percent of the rural population is either poor or near poor (within 200 percent of the poverty level), contrasted with 32 percent of the metropolitan population. Despite this higher proportion of poverty, there is less Medicaid coverage in rural areas--36 percent of the rural poor have Medicaid coverage, compared to 44 percent of the urban poor. Rural residents are more likely than urban residents to purchase insurance on their own, but not enough residents purchase insurance to make up for the lack of Medicaid coverage. Overall, 19 percent of rural residents lack health insurance, compared to 17 percent of the urban population (Rowland and Lyons, 1989). This combination of more poverty and less insurance among rural residents diminishes their ability as a group to pay for health care services, which in turn decreases rural hospitals' financial viability.

4. Improved Transportation

Improvements in transportation and consumer information have combined to decrease rural hospital utilization. Increased automobile ownership and upgrades in the highway system make travel to urban areas easier. The lack of sophisticated equipment and specialists, as well

as publicity about findings showing that small, rural hospitals provide lower quality care, gives residents motivation to bypass their local facilities (Keeler et al., 1992). From 1984 to 1988, isolated rural hospitals lost, on average, 6.3 percent of their Medicare market share, with the smallest isolated hospitals (under 25 beds) losing 16 percent (Lewin/ICF, 1991). Rural Medicare patients are not the only ones to leave the area for inpatient care. The out-migration patterns differ by patient characteristics, with the very elderly the least likely to leave rural areas for inpatient care. Higher-income, privately insured patients are the most likely to leave for inpatient care (Hart, Rosenblatt, and Amundson, 1989; Hogan, 1988). Thus, rural hospitals are losing the highest-paying patients, weakening their financial positions even further.

5. Institutional Instability

Small hospitals can be unstable institutions. The entire medical staff can consist of one physician, and losing that physician can make the hospital financially unsound. Losing one allied health professional, such as a physical therapist or respiratory therapist, can result in expensive equipment going unused, leaving the hospital unable to serve patients needing the use of this equipment. And small absolute changes in inpatient utilization can create severe financial strain on a small institution--especially if the hospital is already operating with minimal staff and has no room for further cuts.

The inability to decrease staff has contributed to the financial downfall of small rural hospitals--especially the smallest ones. As inpatient utilization fell during the 1980s, large institutions could reduce staff in response--a 10-person department can cut staff 10 percent

by laying off one person. Many of the smallest institutions, however, were already minimally staffed, with one-person departments. It was impossible for them to cut costs in response to declining admissions, a situation that resulted in increasingly lower operating margins.

This instability produced a secondary effect: investment decisions became riskier, and a small hospital's costs of borrowing financial capital increased. A hospital board that has experienced cyclical, boom-and-bust finances is hesitant to borrow a large amount for fear the hospital will not be able to make payments in poor years.' Because investors view small hospitals as high-risk investments, the hospitals have difficulty accessing capital debt markets.

The combination of hesitation to borrow and unwillingness to lend makes it difficult for small hospitals to finance improvements. In 1987, only 17 percent of the rural hospitals with fewer than 100 beds acquired new capital debt, while 24 percent of the urban hospitals with fewer than 100 beds and 25 percent of the rural hospitals with more than 100 beds acquired new debt (OTA, 1990, p. 140). As a result, small rural hospitals have older physical plants; the average age of plant for small rural hospitals was 9.3 years, while the average for all rural hospitals was 8.4 years and the average for all urban hospitals was 7.1 years (Mick and Morlock, 1990). The high cost of capital financing forces small institutions to refurbish and replace their facilities more slowly than larger institutions, making it more difficult for them to offer high-quality, state-of-the-art services to patients.

6. Inability to Meet Community Demand for Emergency Care

Maintaining access to emergency care is of paramount importance to many rural communities, yet the emergency room can be a major financial drain for a small hospital. Many rural hospitals exist primarily because area residents want emergency care services (Hart, Rosenblatt, and Arnundson, 1990). And there is often a need for emergency care: the accident rate for agricultural, forestry, and mining occupations, often found in rural areas, is many times the national average (Pratt, 1990).

Providing emergency room services is expensive, however. A survey of 10 hospitals in rural Washington with full-time contracted emergency room coverage found that physician reimbursement alone cost \$390,433 a year (Williamson, Rosenblatt, and Hart, 1991). Hospitals with low emergency room usage cannot afford to pay such fees and must depend on local physicians who bill patients or insurers directly. This results in long on-call hours, which many physicians are no longer willing to endure, leaving administrators with few options other than to incur the high costs of contracted physician coverage, at least part of the time. Added to physician costs are the hospital's costs of staffing the emergency room. The result is a further weakening of the hospital's financial position.

7. Financial and Managerial Weaknesses

Changes in the rural health care environment during the last decade have put tremendous financial stress on small rural hospitals, but their inability to respond to these changes has made their situations even more difficult. Rural hospitals found it hard to respond for a number of reasons, including:

- Rural hospitals started the 1980s in relatively weak financial positions and had no available funds to make changes. In 1975, rural hospitals had average assets of \$35,137 per bed, while urban institutions had average assets of \$51,602 per bed (Kelly and O'Brien, 1983).
- Changes in health care technology, especially diagnostic imaging, necessitated expensive equipment purchases. Hospitals require a large patient base to make such purchases cost-effective. Small rural hospitals could not justify investing in such technology because of their small patient bases and had to wait until less expensive alternatives, such as used CT scanners or mobile CT services, became available. In the interim, these hospitals lost patients and revenue.
- Many rural hospitals had weak management that either did not recognize or could not respond to changes in the health care system. Managers who neglected their hospitals' capital structure, failed to replace departed physicians, or ignored the needs of their communities found it difficult to surmount their financial problems. Recruiting a good administrator can be expensive; the average salary for an administrator in a hospital with fewer than 100 occupied beds is \$94,500, and the lowest 10th percentile salary is \$64,000² (Lampert and Bjork, 1992).
- Establishing a board of directors that understands health care financing, takes the steps necessary to improve finances and management, and commits sufficient amounts of time to a hospital is more difficult in areas with small populations.

B. INTENT OF THE GRANT PROGRAM

Congressional concerns about the financial and operational viability of rural hospitals and the access of rural residents to health care led to the enactment of the Grant Program for Rural Health Care Transition. The conference agreement gave the purpose of the program as follows:

Grants are intended to support projects designed to demonstrate appropriate methods of strengthening the financial and managerial ability of isolated and financially distressed rural hospitals to provide high quality care. Such methods could include cooperative arrangements with other providers, diversification, physician recruitment, and improved management systems.

²This includes both urban and rural hospitals.

In the final bill, Congress mandated that the Health Care Financing Administration (HCFA):

Establish a program of grants to assist eligible small rural hospitals and their communities in the planning and implementation of projects to modify the type and extent of services such hospitals provide in order to adjust one or more of the following factors:

- (1) Changes in clinical practice patterns
- (2) Changes in service populations
- (3) Declining demand for acute-care inpatient hospital capacity
- (4) Declining ability to provide appropriate staffing for inpatient hospitals
- (5) Increasing demand for ambulatory and emergency services
- (6) Increasing demand for appropriate integration of community health services
- (7) The need for adequate access to emergency care and inpatient care in areas in which a number of underutilized hospital beds are being eliminated.

. . .Each demonstration project under this subsection shall demonstrate methods of strengthening the financial and managerial capability of the hospital involved to provide necessary services. Such methods may include programs of cooperation with other health care providers, of diversification in services furnished (including the provision of home health services) of physician recruitment, and of improved management systems.³

At various points in the development of the final bill, the importance of increasing or maintaining the quality of care was mentioned as part of the purpose, although this goal is not mentioned in the final bill. The apparent initial intention that the grants could be used to develop services gave way to, a more fundamental position that the grants must be expended

³Omnibus Budget Reconciliation Act of 1987 (P.L. 100-203), Section 4005 (e).

to have a lasting effect on the financial and managerial strength of the hospital, and should not merely augment current services.

Congress designed this program to be flexible. The problems faced by rural hospitals in general do not necessarily affect any one particular hospital. Rural America is diverse, and the problems encountered at the individual level vary. In fact, some small, rural hospitals are thriving (Seavey, Berry, and Bogin, 1992). To best meet the spectrum of problems at the individual hospital level, Congress put very few limits on the program.

Eligibility for the grant program was restricted to hospitals located in rural areas that had fewer than 100 beds and were not-for-profit institutions. The grants were for up to 3 years, with maximum funding of \$50,000 per year.⁴ Congress specified only two restrictions on how the funds could be spent: no part of the grant could be used to retire debt incurred before the grant period, and the maximum expenditure on capital items was one-third of the grant amount.

Grants were awarded to 181 hospitals located in 46 states and Puerto Rico. The grant period ran from September 15, 1989, to September 15, 1992, although some grantees completed their projects earlier.⁵ Additional grants were made in fiscal years 1990, 1991, and 1992, and the majority of these grantees are still pursuing their projects (Giggie, Nagatoshi, and Wooldridge, 1993).

⁴Initially, grants were for 2 years, but the program was extended to 3 years in the Omnibus Budget Reconciliation Act of 1989 (P.L. 101-239).

⁵A list of grantee hospitals is given in Appendix A.

C. GOALS OF THE EVALUATION

Congress mandated that an evaluation of the Rural Health Care Transition grants program be conducted within 180 days after the conclusion of the grant period. This report evaluates the impact of the grants awarded in September 1989 on the recipient institutions.

The goals of the evaluation are to:

- Determine what the grantees did with their grant funds
- Determine what effects the grants had on the grantee hospitals and their communities
- Analyze whether the grantees met the Congressional goal of strengthening their finances and management

This report provides an analytical framework for the evaluation (Chapter II), describes the grantees at award (Chapter III), and then focuses on three issues:

- How successful grantees were in implementing their objectives and what problems hospitals had in implementing their projects (Chapter IV)
- What aspects of hospital operations changed, and which were due to the grant (Chapter V)
- If the grant project helped rural hospitals improve their financial and managerial stability (Chapter VI)

Chapter VII discusses potential changes to the grant program in light of the findings.

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II. DEFINITIONS OF PROJECT AND PROGRAM OUTCOMES

A. WHAT IS A SUCCESSFUL PROJECT?

The legislation establishing the RHCT grants program stipulated that “Each demonstration project. . . shall demonstrate methods of strengthening the financial and managerial capability of the hospital to provide necessary health care services.” Thus, the primary goal of the RHCT grants program is to strengthen rural hospitals so that they can continue to provide health care services in their communities. There are many different ways to achieve this goal; they include establishing a consortium, recruiting physicians, establishing new services, or converting to another type of health care institution. The evaluation framework must be broad enough to address a variety of projects, yet ultimately judge success according to the legislation’s primary goal--strengthening the financial and managerial capability of a hospital to ensure its sustained provision of health care.

To evaluate the RHCT grant projects, we define a successful project as one that meets three criteria:

- It must be implemented.
- Its intended outcome must be achieved.
- The outcome must improve the hospital’s finances and management.

To achieve success, these criteria must be met sequentially. Figure II.1 illustrates the logic of the evaluation with examples. However, it is important to note that even if an individual

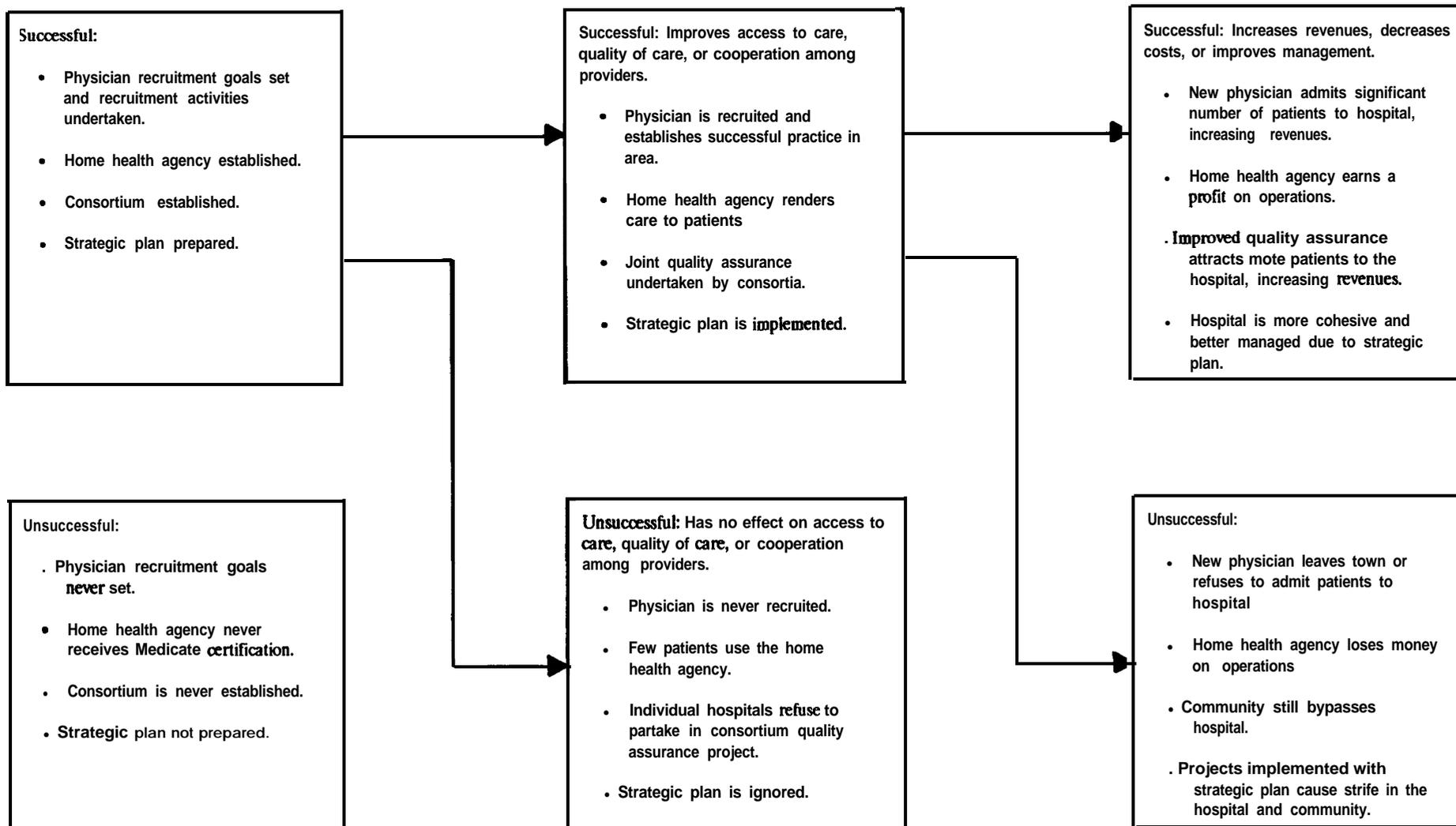
FIGURE 11.1

WHAT IS A SUCCESSFUL PROJECT?

PROJECT IMPLEMENTED?

PROJECT OUTCOME ACHIEVED?

HOSPITAL FINANCES AND MANAGEMENT IMPROVED?



hospital's grant project is successful by all three criteria, the grant program may not be a desirable use of funds from a national policy perspective.

1. Implementing a Project

To achieve success, a hospital must first implement a project. Grantees that achieve goals such as obtaining a certificate of need for a nursing home, Medicare certification for a home health agency, or building permits allowing them to establish new services have implemented a project with the potential to provide services to the community. The grantees that do not implement their projects--for example, those that never agree on consortium activities, never prepare a strategic plan, or fail to begin physician recruitment--cannot possibly have the desired effects on the hospital or the community. As we show in Figure 11.1, project implementation is necessary for a successful project--but it is not sufficient for a successful project.

2. Achieving Outcomes

After a project is implemented, it must meet a second criterion--the project must achieve its intended outcome. Projects that set out to improve access to care or quality of care must accomplish these goals to be considered successful. It is not enough to establish a new service--area residents must use the service if access to care is to improve. Similarly, it is not enough to attempt to recruit a physician--a physician must be recruited and begin practicing. It is not enough to provide staff training--quality of care must improve. After implementation, a successful project achieves its objective. Again, this condition is necessary for a successful

project but is not sufficient by itself, because project outcomes can be achieved without improving the hospital's finances and management.

3. **Assessing Finances and Management Capacity**

For a project to be deemed successful, the outcome must positively affect the hospital's finances or management. A consortium implementing a joint quality assurance program that increases use of member hospitals and in turn improves their financial stability would be considered a successful project. Implemented projects that achieve their intended outcomes but are a net drain on a hospital's financial resources are considered unsuccessful for the purposes of this program. For example, a project establishing a new service residents use but cannot pay for is unsuccessful because it will negatively affect the hospital's financial status (assuming it does not indirectly increase use of other, remunerative services the hospital provides). Similarly, recruiting a physician who does not admit patients to the grantee hospital does not improve the hospital's financial status even though the physician's services improve local access to care. Improving quality of care does not improve a hospital's financial status if the quality improvement does not attract new patients. Furthermore, a new service that creates a lot of stress for management and causes the hospital to lose an administrator does not improve the grantee's management. Projects must achieve the legislative goal--increased financial and managerial capability--for the **RHCT** grant project to be considered successful.

4. Consistency with National Policy Goals

Even if the individual grant projects are successful--that is, they meet the three criteria for successful projects--the RHCT grants program may be ineffective for addressing national rural health care concerns. For the program to be successful, the projects must improve access to health care service both in the local area and across *all* rural areas. If the individual projects achieve their success either by competing with other local providers or by undermining access to care in other rural areas, then the program is not effective for improving rural health problems. For example, if a grantee hospital introduces a service that is already available locally, thus causing another provider to close, or recruits a physician who increases hospital admissions, but who has left another rural area that consequently has to recruit another physician, then the program is not improving rural health care. Projects must do 'more than just redistribute health care resources in rural America; resources must be distributed more efficiently so that access to care improves overall for the *program* to be considered successful.

B. DATA USED IN THE STUDY

1. Types and Sources

The grantee data used in this report were reported by active grantees every 6 months. In each 6-month reporting period, the grantees were asked to submit three forms: (1) a project progress form, which described the grantee's progress on its grant project during the previous 6 months, as well as reasons for successes and delays; (2) a grant expenditure form, which indicated the level of expenditures during the previous 6 months; and (3) a background data section. Three background data sections were employed at different times: a baseline

section, a continuation section, and a conclusion section--sent to all grantees as they left the program (see Section 2). The background data included area characteristics (number of other providers in the grantee service area, distance to closest hospital); hospital characteristics (number of beds, number of staff employed by type of staff); hospital services and equipment (years since last renovation, emergency room hours of operation); hospital management structure (ownership, management contract); and hospital financial data (assets, liabilities, patient service revenues). The grantees were also requested to send copies of their audited financial reports so that key financial data could be verified.'

To complement these data, case-study site visits and telephone follow-up contacts were conducted with 44 grantees during the 3-year period. These site visits and telephone contacts collected data on the grant projects, the hospital, and the community in richer detail than was possible from the self-reported, semi-annual progress forms and background sections. Appendix B describes the contacts with case-study grantees and compares characteristics of all grantees with those of case-study grantees.

2. Number of Grantees

One hundred and forty-three of the 181 hospitals that received Rural Health Care Transition grants in September 1989 continued in the program until September 1992, and 28 completed their projects before the Congressionally mandated **3-year** limit (see Table 11.1).

'Grantees could not always provide this information for various reasons, including the hospital recently changed ownership and no previous records were kept; the grantee was not audited; or the grantee was part of a multihospital system, in which audits were systemwide and not for the individual hospital.

Of the 1989 grantees, 94 percent completed the grant program. Of the 10 hospitals that did not complete the program, 5 voluntarily gave up their grants, 4 closed and were terminated from the program, and 1 was terminated by the Health Care Financing Administration for noncompliance with the terms and conditions of the grant. Four grantees closed as hospitals but continued in the program as clinics and nursing homes.

C. THE EVALUATION FRAMEWORK

The evaluation focuses on grantees' accomplishment of the three criteria needed for a successful project. First, using data from project progress forms and case studies, we describe whether and how the grantees implemented their projects. For projects that were particularly difficult to implement, we discuss whether the difficulties were specific to individual grantees or whether general problems prohibited implementation. This analysis is presented in Chapter IV.

The second criterion is whether grantees achieved their intended project outcomes. Using information reported on the final project progress form, we report on services implemented through the grant program, their use by the community, and whether the services were financially self-supporting and retained at the end of the grant program. Comparing background data from the pre-award period with the final year of the program, we describe changes in hospital utilization, availability of specialized inpatient and outpatient services, and availability of physicians and allied health professionals that indicate whether access to health care services improved. We integrate these data with information collected during the case

TABLE II.1
1989 GRANTEE STATUS

	Number of Months in Program							Cumulative 9/15/89 - 9/15/92
	At Award 9/31/89	Month 6 3/31/90	Month 12 9/30/90	Month 18 3/31/91	Month 24 9/30/91	Month 30 3/31/92	Month 36 9/15/92	
Number of Grantees (Hospitals) at Start of Period	184 (181)	--	--	--	--	--	--	184 (181)
Number of Voluntary Terminations in Period	2^a (2)	0	2^c (2)	0	0	1^j (1)	0	5 (5)
Number of HCFA Terminations in Period	0	0	1^d (1)	0	0	0	0	1 (1)
Number of Hospitals Ceasing Operations and Terminated in Period	0	1^b (1)	1^e (1)	1^g (1)	1^h (1)	0	0	4 (4)
Number Completed in Period	0	0	5^f (4)	0	24ⁱ (24)	0	145 (143)	174 (171)
Number of Grantees (Hospitals) Remaining at End of Period	182 (179)	181 (178)	172 (170)	171 (169)	146 (144)	145 (143)	0 (0)	0 (0)

NOTE: The number of grantees exceeds the number of hospitals because three grantees received two awards each. The sum of both awards did not exceed \$50,900 per year.

^aBreckinridge Memorial Hospital, Kentucky
Arkansas Memorial Hospital, Arkansas

^cChurchill Regional Medical Center, Nevada
Elko General Hospital, Nevada
Mt. Grant General Hospital, Nevada
Nye Regional Medical Center, Nevada
Boone County Community Hospital, Nebraska

^bSalamanca District Hospital, New York

^gCorning Community Hospital, Arkansas

^eRangely District Hospital, Colorado
Wilson Memorial Hospital, Texas

^hBaxter Memorial Hospital, Kansas

^dCalhoun General Hospital, Florida

ⁱGrantees not extending grant funding for third year.

^fSt. Luke General Hospital, Louisiana

^jMethodist Hospital, South Dakota

studies to show how these results were achieved and whether the quality of local health care services improved. This analysis is presented in Chapter V.

Third, we ask the key question: did the grant program improve grantee financial and managerial capacity? Using grantees' financial data, we construct measures of financial performance and examine them over time to determine if any changed after the hospitals received their grants, with the caveats that (1) it may be too early to observe any grant effects; and (2) the impacts of the grants are expected to be small because of the small size of the grants (\$50,000 per year). Included are measures of hospital revenue flow and profitability, short-term liquidity, and long-term financial strength. We also examine hospital management characteristics to determine management structures (for example, contract-management and management-board relations) or outcomes associated with good management (such as faster revenue collection, lower personnel turnover, and less patient migration) that changed from the pre-award period. We supplement these trend data with case-study data describing how the observed changes were achieved, whether the changes can be attributed to the grant projects, and whether they can be expected to continue in the future. This analysis is presented in Chapter VI.

Finally, we discuss whether the grant program is consistent with national rural health care goals. Even if the individual grant projects achieve their intended goals, the overall program effects may be inconsistent with national goals. Although this evaluation did not collect data on these broad issues, we discuss the broad issues, along with potential ways to improve the program, in Chapter VII.

III. THE GRANTEE HOSPITALS

The 181 hospitals receiving Rural Health Care Transition grants in September 1989 represented 'about 9 percent of the hospitals eligible for the grant program. This chapter describes the characteristics of the grantee hospitals at the time they applied to the program and compares their county characteristics to those of all eligible hospitals. These background data allow us to determine whether grantees' experiences can reasonably be generalized to all eligible rural hospitals. They also help us understand what grantees were like when they entered the program.

A. AREA CHARACTERISTICS

The 1989 grantees were located in areas very similar to the areas of all eligible hospitals.' The grantees were in counties with a median of 24.8 persons per square mile, compared to 24.6 persons per square mile in all counties with eligible hospitals (see Table 111.1). The percentage of elderly persons was also virtually the same: 14.4 percent of the grantees' population was over 65 years old (median value), while 14.3 percent of the population was over 65 years old in all counties with eligible hospitals.

The grantees' counties were very slightly poorer than all counties with eligible hospitals. The median annual per capita income in 1986 was \$11,271 in the grantees' counties, just \$72

¹We compared the characteristics of the counties where 1989 grantees were located to those of all rural counties with small eligible hospitals in 1989. Eligible hospitals had to have fewer than 100 acute-care beds, be non-Federal, nonproprietary, and reimbursed by Medicare as rural hospitals under the prospective payment system.

TABLE III.1

COUNTY CHARACTERISTICS OF GRANTEES AND ALL ELIGIBLE HOSPITALS

Characteristic	1989 Grantees	All Eligible Hospitals
Population Density in County, 1987	24.8	24.6
Percent over Age 65 in County, 1980	14.4 %	14.3 %
Annual Per Capita Income in County, 1986	\$11,271	\$11,343
Percent over Age 65 Living in Poverty in County, 1980	18.4 %	17.7 %

SOURCE: Area Resource File.

less than in all rural counties with eligible hospitals (\$11,343). In the grantees' counties, 18.4 percent of the elderly lived in poverty, in contrast to 17.7 percent of the elderly in all rural counties with eligible hospitals.

The grantees typically were located only 40 minutes from the nearest hospital, although the maximum distance was 3% hours. (See Table 111.2.) Only 15 percent of the grantees were frontier hospitals.²

Most grantees had nursing homes and home health agencies in their service areas, but considerably fewer had public health clinics.³ The overwhelming majority of the grantees (92.4 percent) had at least one nursing home in their service areas, and 87.8 percent had at least one home health agency. This widespread availability contrasts sharply with the availability of public clinics: 58 percent of the grantees had at least one public health clinic in their service area, 19.9 percent had a community health center, and only 3.9 percent had a migrant health center.

B. HOSPITAL CHARACTERISTICS

The grant program was intended to aid small, rural hospitals--by definition, hospitals in the program had to have fewer than 100 beds. Yet, even within this size category there was large variation in hospital characteristics: by some measures, the largest grantees were 10 times larger than the smallest ones. This section describes the characteristics of hospitals that

²Frontier hospitals are defined as hospitals located in counties with fewer than six persons per square mile. There were about 277 such hospitals nationwide in 1987 (OTA, 1990, p. 118), and most of them would have been eligible for the grant program in 1989.

³This is the primary service area, as defined by the grantee hospital.

TABLE III.2

SUPPLY OF OTHER HEALTH CARE PROVIDERS IN THE 1989 RHCT GRANTEE HOSPITALS' SERVICE AREAS AT AWARD

Supply of Qther Providers	Distribution or Mean
Median Travel Time to Closest Hospital, 1989	40 minutes
Number of Nursing Homes in Service Area, 1989	
None	7.5 %
One	26.0 %
Two	20.2 %
Three or more	46.2 %
Number of Home Health Agencies in Service Area, 1989	
None	12.2 %
One	40.1 %
Two	26.7 %
Three or more	20.9 %
Number of Public Health Clinics in Service Area, 1989	
None	42.0 %
One or more	58.0 %
Number of Community Health Centers in Service Area, 1989	
None	80.1 %
One or more	19.9 %
Number of Migrant Health Centers in Service Area, 1989	
None	96.1 %
One	3.9 %

SOURCE: First semi-annual grantee background report.

NOTE: Each service area was defined by the individual hospital.

started the grant program to provide an understanding of who the grantees were.

All grantees were relatively small hospitals, and a large proportion of them took advantage of the swing-bed provisions to maximize use of their facilities.⁴ Almost three-quarters of the 1989 grantees had 60 or fewer licensed, acute care beds and almost one-third had 30 or fewer (see Table 111.3). Compared to rural hospitals nationwide the grantees were more likely to have swing beds, but they had fewer swing beds per hospital. Seventy-three percent of the grantees designated some of their acute care beds as swing beds--but the majority of these grantees had 10 or fewer swing beds. Nationally, in 1987 only 47 percent of the eligible hospitals had swing beds, but the average number of swing beds was 17.3 (Office of Technology Assessment [OTA], 1990, p. 165).

The typical grantee hospital had a very low inpatient occupancy rate. The median occupancy rate for licensed acute care beds was 28 percent, and the median swing bed occupancy rate was 21 percent. The majority of the hospital days were incurred by Medicare and Medicaid patients; Medicare patients accounted for 41 percent of the patient days on

⁴All hospitals that are located in rural areas (as defined by the Census Bureau), have fewer than 100 certified inpatient beds, have received certificate of need approval for provision of long-term care services (in states where certificate of need is required), and do not have in effect a 24-hour nursing waiver (which temporarily allows rural hospitals to operate without 24-hour registered nurse coverage) are eligible to provide postacute extended care services--commonly call swing beds. A hospital with more than 49 beds (but fewer than 100) must have an availability agreement with each Medicare-certified skilled nursing facility in its geographic area (unless there are no willing skilled nursing facilities) and must transfer patients within 5 days of learning that a skilled nursing facility bed is available, unless the transfer is not medically appropriate (Commerce Clearing House, 1992, section 482.66).

TABLE III.3

RHCT GRANTEE HOSPITAL CHARACTERISTICS, 1989

Characteristic	Distribution
Licensed Acute Care Beds	
30 or fewer	32.0 %
31 to 60	40.0 %
61 or more	28.0 %
Swing Beds	
None	27.0 %
10 or fewer	43.0 %
11 to 20	14.0 %
21 or more	16.0 %
Median Licensed Bed Occupancy Rates	
Acute care	28.0 %
Swing^a	21.0 %
Average Number of Hospital Days, by Payor	
Medicare	3,099
Medicaid	753
Blue Cross/Blue Shield	650
Other insurance	1,961
Private pay	635
No pay	383
Median Financial Position	
Operating margin	-3.55 %
Total assets	\$3,599,000
Total liabilities	\$1,892,377
Net patient service revenue	\$3466,891

SOURCE: First semi-annual grantee background report.

NOTES: Swing beds are a subset of total beds. One grantee ceased hospital operations at the time of its award and is not included.

^aFor those hospitals with swing beds.

average, while Medicaid patients accounted for 10 percent--percentages that are approximately the same as the proportion of revenue from Medicare and Medicaid reported for rural hospitals nationwide (OTA, 1990, p. 132).

The financial position of grantees varied. The majority were losing money on operations. Just over 68 percent had negative operating margins,⁵ and the median grantee had an operating margin of -3.55 percent. The typical grantee hospital had \$3,599,000 in total assets, but 16 percent of the grantees had more than \$10 million in assets, while 7.4 percent had \$1 million or less. Net patient service revenues varied considerably as well, with 28.6 percent of grantees reporting under \$2 million in net patient service revenues in the fiscal year before the grant (5.6 percent reported under \$500,000) and 38.5 percent reporting more than \$5 million. The \$50,000 grant represented anywhere from 21 percent to less than 1 percent of the grantees' yearly net patient service revenue.

The hospitals started their grant projects with a wide disparity in physician availability, not surprising given the variation in number of licensed beds. Sixteen percent of the grantees had only one or two physicians on staff, and 31 percent had no courtesy staff physicians (see Table 111.4). In contrast, a third had 10 or more physicians on staff, and 23 percent had 10 or more courtesy staff physicians. The grantees averaged 10.4 physicians on their regular staffs, 2 more

⁵Operating margin is defined as net patient service revenues minus operating costs/net patient service revenue. See Appendix D for details on financial data.

TABLE III.4
HOSPITAL PERSONNEL CHARACTERISTICS, 1989

Characteristic	Distribution
Number of Physicians on Regular Staff	
2 or fewer	16.0 %
3 to 9	51.0 %
10 or more	33.0 %
Number of Physicians on Courtesy Staff	
None	31.0 %
1 to 5	30.0 %
6 to 9	16.0 %
10 or more	23.0 %
Number of Registered Nurses	
15 or fewer	40.0 %
16 to 25	17.0 %
26 or more	43.0 %
Number of Nonclinical, Administrative Personnel	
3 or fewer	48.0 %
4 to 9	39.0 %
10 or more	13.0 %
Total Personnel	
80 or fewer	34.0 %
81 to 160	29.0 %
161 or more	37.0 %

SOURCE: First semi-annual grantee background report.

than the national average of 8.4 for rural hospitals with fewer than 100 beds in 1987 (OTA, 1990, p. 240).⁶

The number of nonclinical, administrative personnel also varied widely, with 48 percent of the grantees having three or fewer administrative personnel (generally an administrator, a bookkeeper, and a secretary).⁷ In contrast, 13 percent of the grantees had 10 or more nonclinical administrative staff. These hospitals typically employed an administrator; an assistant administrator; a chief financial officer or controller; a personnel director; support staff; and employees with responsibility for fund development, public relations, and physician recruitment.

C. GRANTEES' PERCEPTIONS OF THEIR PROBLEMS AND THEIR FUTURE

The Rural Health Care Transition grants program is intended to improve rural hospitals' financial position and management, but it does not impose a project structure or identify a specific problem for grant projects to address. Instead, within broad guidelines, grantees identify their own problems and develop projects to address them. As a result, it is important to understand what grantees perceived their problems to be at the beginning of the grant program, and to infer what reasonable solutions grantees might have decided to pursue with

⁶The national average includes only general family practice, general internal medicine, pediatrics, general surgery, and obstetrics and gynecology; it does not include specialists on staff.

⁷Hospitals operated by contract management firms may have reported fewer administrative staff because the hospital administrators and chief financial officers in contract-managed hospitals may not technically be hospital employees.

their grants. Even if grantees' perceptions of their problems were not realistic, the fact remains that the grantees pursued projects *they thought* would alleviate their problems.

The grantees cited two dominant problems: physician issues and reimbursement. The grantees' greatest concern was physician shortages and recruitment and retention problems; a large majority (71 percent) cited it as a critical issue for their hospitals (see Table 111.5). A majority (55 percent) were concerned about the inadequacy of Medicare and Medicaid reimbursement.* A minority of grantees cited other problems. Just over one-third considered shortages of nonphysician health care personnel to be a critical issue, and 15 percent considered difficulties obtaining or financing advanced technologies to be critical. A handful indicated that the aging population, rural economy, or patient migration was a major concern.

The concern about perceived physician shortages was related to lower physician availability. The grantees that were concerned about physician availability had slightly fewer physicians per licensed acute care bed than those that were not concerned (.19 versus .22). Furthermore, patients waited an average of two additional days for a routine, primary care appointment in the service areas of grantees that were concerned about physician availability (see Table 111.6). Not surprisingly, physician recruitment and retention was one of the most popular goals at the start of the grant program (see Chapter IV).

*Note that when the Rural Health Care Transition grants program started, legislation eliminating the urban/rural difference in Medicare payments (Omnibus Budget Reconciliation Act of 1990) had not been passed.

TABLE III.5
HOSPITALS' PERCEPTIONS OF THEIR PROBLEMS

Problem	Percentage of Hospitals Identifying Each as a Major Issue
Physician Shortages, Recruitment and Retention	71.0 %
Medicare and Medicaid Reimbursement	55.0 %
Nonphysician Health Professional Shortages and Recruitment	36.0 %
Ability to Keep Pace with Technological Advancement	15.0 %
Patient Migration	9.0 %
Rural Economy	7.0 %
Aging Population	5.0 %

SOURCE: First semi-annual grantee background report.

NOTE: Because hospitals could cite up to three major problems, numbers will total more than 100 percent.

TABLE III.6

HOSPITALS' PERCEPTIONS OF THEIR PROBLEMS:
PHYSICIAN RECRUITMENT AND RETENTION

Perception	Average Ratio of Physicians to Licensed Acute Care Beds	Average Waiting Time for Routine Appointment with a Physician, in Days
Physician Recruitment and Retention Is a Major Issue	.19	6
Physician Recruitment and Retention Is Not a Major Issue	.22	4

SOURCE: First semi-annual grantee background report.

Government reimbursement (Medicare and Medicaid) is an obvious grantee concern because such a large part of revenue is derived from these sources.⁹ Nevertheless, it doesn't matter what the reimbursement levels are if a hospital has no patients. In fact, grantees with higher occupancy rates were much more likely to cite Medicare and Medicaid reimbursement as a problem than grantees with very low occupancy rates (see Table III.7), suggesting that many hospitals are focusing on relevant issues. Many of the grant projects developed outpatient and home health services--services for which Medicare reimburses relatively more generously.

Grantees that identified an inability to keep pace with technology as a major concern appear to be trying harder than other grantees to keep their plant and equipment up to date. The grantees citing this problem had newer radiology units and renovated their facilities more recently, on average, than the grantees that did not cite this as a problem (see Table 111.8). None of the grantees that had main radiology units over 25 years old, and only one that had not renovated in the past 25 years indicated that technological issues were a problem. The other problems these hospitals face (such as difficulty in recruiting physicians) outweigh the technology issue, even though the problems are related--it is very difficult to recruit physicians to hospitals where the hospital equipment is out of date. However, some grantees may simply not have recognized that aging plant and equipment is a problem, or they may have become so discouraged that they no longer single this out as a difficulty. In either case, their grant projects are unlikely to focus on technology improvement.

⁹More than 50 percent of all rural hospitals' net patient service revenue in 1986 was from Medicare and Medicaid (OTA, 1990, p. 132)

TABLE III.7

HOSPITALS' PERCEPTIONS OF THEIR PROBLEMS: MEDICARE PAYMENT

Perception	Occupancy Rate		
	Less than 25 Percent	25-50 Percent	Greater than 50 Percent
Medicare Payment Is a Major Issue	50 %	57 %	66 %
Medicare Payment Is Not a Major Issue	50 %	43 %	33 %

SOURCE: First semi-annual grantee background report.

TABLE III.8

HOSPITALS' PERCEPTIONS OF THEIR PROBLEMS:
INABILITY TO KEEP PACE WITH TECHNOLOGY

Perception	Average Age of Main Radiology Unit, in Years	Average Number of Years Since Last Major Renovation
Inability to Keep Pace with Technology Is a Major Issue	8.2	9.9
Inability to Keep Pace with Technology Is Not a Major Issue	11.4	10.0

SOURCE: First semi-annual grantee background report.

Perhaps even more important than the problems identified are the issues grantees did not mention. Virtually no grantees identified the declining demand for inpatient care (or the changes in the practice of medicine in general) as a major concern; yet 39 percent had less than 25 percent occupancy. This suggests that some hospital administrators did not recognize declining demand as a problem, or, alternatively, that administrators believed the lack of inpatient demand was attributable to their inability to recruit and retain physicians and their problem could be solved if they recruited more physicians. This interpretation is important--if correct, it indicates that at the start of the grant program, many hospital administrators may have believed area residents wanted their hospital's services. These administrators would be unlikely to consider any change from a full-service hospital. They would also be less likely to consider changes such as down-sizing or converting into another type of health care institution. When asked at the beginning of their grant period what type of facility their hospital should become in the future, only 13 grantees (8 percent) indicated that their hospital should change from a full-service hospital to another type of health care institution.

IV. PLANNING AND IMPLEMENTING THE PROJECTS

In 1989, 144 Rural Health Care Transition (RHCT) grants were awarded to individual hospitals and 40 grants were awarded to hospitals in 11 consortia. A few of the awards were for project planning only, but most were either for planning and implementing a project or implementing a previously planned project. Many of the awards were made to projects with multiple objectives. This chapter discusses project goals, processes grantees followed in planning and implementation, difficulties they overcame, and eventual levels of success in implementation. The information in this chapter is based on grant proposals, semi-annual project progress reports provided by most of the 184 grantees, and case studies of 44 grantees.¹

A. PROJECT SELECTION AND OBJECTIVES

Two-thirds of the case-study grantees had strategic plans or an annual planning process identifying their development goals for the coming year or more. These plans had targeted half of the projects supported by the grants as high priority goals before the grant proposals were submitted. Another fifth of the grantees proposed to use the grant to fund strategic planning or needs assessment. The remainder (about one-third of the grantees) introduced

¹Table B.1 in Appendix B shows the frequency and type of contact made with case-study grantees. Table B.2 shows the characteristics of case-study grantees and all grantees. The case-study grantees were comparable to all grantees in most respects. (A slightly smaller proportion of very small hospitals was found among the case-study grantees than among all grantees.)

essentially ad hoc projects, initiated because the grants were available.’ Figure IV.1 illustrates the proportions of projects developed through strategic planning.

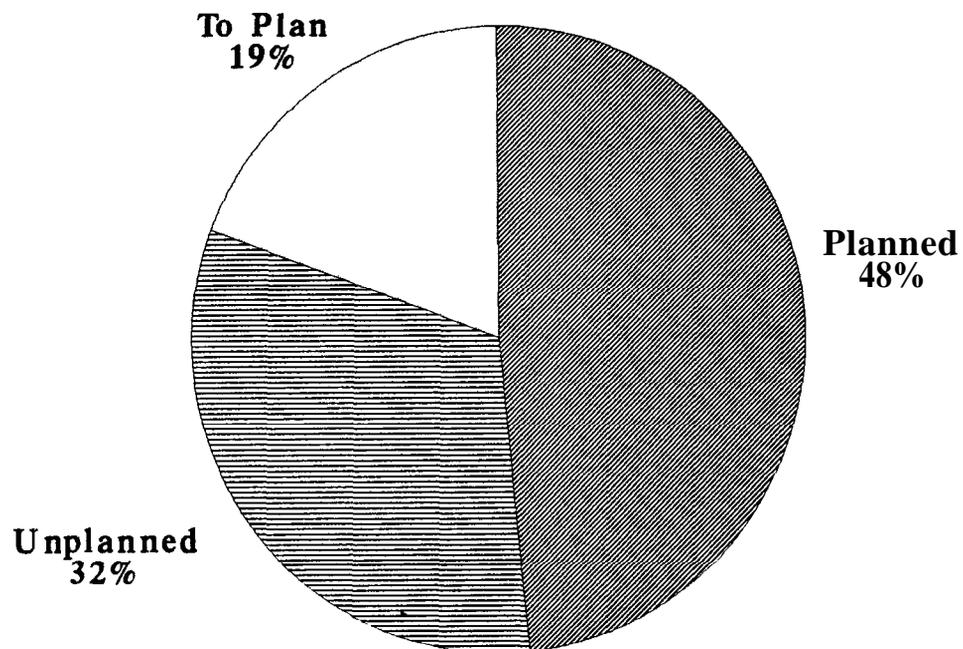
The process through which case-study grantees decided what type of grant project to apply for also varied. Some chose projects identified by a prior planning process, and a few had conducted community studies to establish need (53 percent). Other grantees delegated the choice of project to senior executives or assembled a group to generate good ideas (18 percent). Fifteen percent had no explanation for project selection other than agreeing that the community had a need. The remaining grantees chose to implement a planning project.

The grant projects were intended by Congress to improve access to services, provide needed services, develop plans to change, or improve the quality of care, all interim goals that would ultimately increase total hospital revenues (although not necessarily net revenues). When asked what problem their projects were intended to address, 38 of the 44 case-study grantees described their intentions as follows:

- Provide a needed service (39 percent)
- Develop a hospital plan or identify community needs (16 percent)
- Improve quality (13 percent)
- Provide more physician services (13 percent)
- Improve access (8 percent)
- Improve hospital finances (8 percent)

²Four of the 31 hospitals for which data were available had no plan, 3 said the project was not part of a plan, and another 3 hospitals said administrators and board members disagreed about whether the project was part of a plan.

**FIGURE IV.1
PLANNED AND UNPLANNED
GRANT PROJECTS**



To Plan = Grant Project Was to Do Strategic Planning

Planned = Grant Project Was Part of Prior Strategic Plan

Unplanned = Grant Project Was Never Planned

Source: Case Studies.

Consistent with the broad objectives established for the grant program by the legislation, grantees proposed a wide range of projects to help overcome financial and management problems. 'Table IV.1 lists grantees' proposed objectives, ranked from most to least popular. Outpatient, -emergency, and home health services were proposed by 43 percent of the grantees; patient services (such as Lifeline, wellness programs, and routine transportation) were proposed by 34 percent; health professional recruiting was proposed by 32 percent; and planning and management improvement projects were proposed by 26 percent. Percentages total more than 100 because many grantees had multiple aims. The case-study grantees had a similar distribution of proposed objectives.

B. GRANT PROJECT PLANNING AND START-UP

Grant availability was a critical stimulus to project implementation. Two-thirds of the case-study grantees would not have introduced their projects as soon (18 percent), as completely (15 percent), or perhaps ever (33 percent) without the grant program. The remaining one-third would have introduced their projects without the grant program, although some of them pointed out that they would probably have had more difficulties and incurred greater costs.

To establish the role of the grant in project planning and implementation, we asked grantees whether they had planned or implemented any part of their project before grant award. Given the high proportion of grantees selecting projects from strategic plans, it is not surprising that a large percentage (39 percent) of the case-study grantees had started planning their projects before the grant was awarded. The remainder had only their proposal as a

TABLE IV.1
PROPOSED PROJECT OBJECTIVES

	All Grantees		Case-Study Grantees	
	Number	Percent	Number	Percent
Outpatient and Emergency Services and Home Health Services	76	43 %	19	43 %
Patient Services	61	34 %	14	32 %
Recruiting Health Professionals	56	32 %	17	39 %
Recruiting primary care physicians	26	15 %	10	23 %
Recruiting specialists	13	7 %	3	7 %
Planning and Management Improvement	46	26 %	12	27 %
Inpatient Services	30	17 %	8	18 %
Day Care”	16	9 %	3	7 %
Number of Grantees	178	--	44	--

SOURCE: Grant proposals.

NOTE: Because hospitals could have more than one goal, the column percentages do not total 100 percent.

“Includes respite care, adult day care, child care, and an assisted living facility.

planning document but otherwise had to plan their projects after award. However, 17 percent of case-study' grantees also had begun to implement their projects before award.

Even though some grantees began planning or implementation before grant award, most started their' projects slowly, spending only about half as much of their grants in the first 6 months of their projects as they did in subsequent 6-month periods (see Section D). This slow start-up resulted principally from difficulties in getting certificates of need and in recruiting project coordinators and clinicians to start projects. Many grantees were unprepared to start work after award, and some admitted the grant award came as a surprise--they had not expected to win and were suddenly confronted with implementing a project.

Recruiting remained the predominant obstacle to project implementation throughout the first year. After 12 months, one-third of the grantees said that recruiting or retention problems had slowed their projects either directly or indirectly by diverting attention from them. Other reasons for delay were coordination difficulties with other organizations (21 percent) and major financial problems unrelated to the grant project.³

C. PROJECT IMPLEMENTATION

To fulfill the goal specified by Congress of improving grantees' finances and managerial capability, grants had to be implemented and used. For example, a project that set out to

³Examples from the 22 case-study grantees visited during their first year include: delays getting a certificate of need or certification as a home health agency or a Rural Health Clinic (4 grantees), problems getting people and institutions to cooperate (3 grantees), billing or reimbursement difficulties (2 grantees), cost problems (2 grantees), a dearth of patients (2 grantees), the grant restriction on capital items (1 grantee), and delay resulting from change in administrator (1 grantee).

introduce a service must have introduced it, and patients must have used and paid for it, for finances to improve. This section discusses how successful grantees were at implementation and describes barriers to and facilitators of success.

We assess overall success using data on all grantees to answer a broad question: did grantees fulfill their proposed objectives during their projects? We evaluate whether the detailed proposal objectives were implemented, changed, or never completed, using case-study data on 44 grantees. Finally, we classify the case-study grantees according to the completeness of implementation and the financial effects of their grant projects.

1. Proposed Objectives

A comparison of proposed objectives with subsequent activities shows the extent to which grantees revised their objectives after award. It is important to remember that 1989 grantees applied for and received funding for **2-year** projects. Congress subsequently allowed them to extend their grants to 3 years, and most of them did so, expanding their objectives accordingly. Table IV.2 compares the initially proposed objectives to subsequently reported ones.

For all categories, more grantees reported beginning activities intended to meet an objective than had originally proposed the objective. After award, recruiting health professionals was the most common grant-funded objective, mentioned by 98 percent of grantees, more than three times the number (32 percent) initially proposing to use the grant for this purpose⁴ Half of these grantees used the grant funds to recruit physicians, whereas

⁴Fifty-six percent of the grantees reported attempting to recruit a project coordinator. Project coordinator recruiting was not coded as a recruiting objective in the proposals.

TABLE IV.2

INITIALLY PROPOSED OBJECTIVES VERSUS THOSE
REPORTED DURING THE GRANT PERIOD

	Initially Proposed Objectives	Subsequently Reported Objectives
Outpatient and Emergency Services and Home Health Services	43 %	66%
Patient Services	34 %	49 %
Recruiting Health Professionals	32 %	98 %
Planning and Management Improvements	26 %	68%
Inpatient Services	17 %	31 %
Number of Grantees	178	178

SOURCE: Grant proposals and project progress reports 12 months, 18 months, 24 months, and 30 months after grant award.

NOTE: Nine percent of the grantees proposed adult day care programs or an assisted living facility. These services were not coded as a separate category in the project progress reports.

only 22 percent originally proposed to do so. Planning and management improvement was the second ' most common grant-funded activity, mentioned by 2.5 times the number (26 percent) that originally proposed it.

Discussions with case-study grantees revealed three reasons for the expansion in objectives: (1) some grantees chose planning projects, and, after planning was completed, implemented a variety of other activities such as physician recruiting; (2) some grantees were able to fulfill their initial objectives before the end of the **3-year** grant and then spent grant funds on additional activities; and (3) physician availability is such a critical factor in hospital performance that physician losses sometimes made recruiting the highest priority objective, which had to be undertaken before any other project objectives could be fulfilled.

2. Completion of Objectives

This section evaluates how successfully case-study grantees planned and implemented grant-funded activities and services. Activities and services are evaluated whether they were proposed originally or added later.⁵ Four aspects of success are discussed: (1) whether the grantees completed planning the activity or service; (2) whether the grantee implemented the activity or service; (3) whether the activity or service was actually used by patients; and (4) whether the grantee plans to continue the activity or service after the grant period.

The activities and services included:

- Physician recruiting (33 grantees)

⁵Activities are discussed that at least four grantees proposed or implemented.

- Outpatient services (23 grantees)
- Patient services (18 grantees)
- Inpatient services (14 grantees)
- Strategic planning and needs assessment (13 grantees)
- Home health and day care (6 grantees)
- Emergency services (5 grantees)
- Routine medical transportation (4 grantees)

Physician Recruiting. Twelve case-study grantees set out to recruit physicians, 7 undertook recruiting as a result of grant-funded strategic planning, and another 14 added physician recruiting because of needs that developed after grant award.

Of the 12 grantees initially setting out to recruit, 10 implemented a physician recruiting process, 8 of the 10 were successful at recruiting, and only 4 retained all the recruited physicians through the end of the 3-year grant period. The methods that were successful in yielding physician recruits included hiring a full-time physician recruiter (four of the largest hospitals chose this method, recognizing that recruiting must be a full-time activity) and involving local physicians in recruiting (three hospitals went this route). Even after hiring a physician recruiter, one hospital was unable to recruit any physicians and as a result never opened the Rural Health Clinic that was its ultimate objective. Another hospital wanted to introduce a radiology tele-net project and needed a radiologist; it never recruited one. By the end of the 3-year grant period, one of the eight hospitals that recruited successfully had lost

all the physicians recruited, and three had lost at least one of the physicians recruited with grant funding.

More grantees added physician recruiting to their grant-funded activities (14) than originally proposed this activity (12). Overall, 33 case-study grantees undertook physician recruiting; of these, 23 recruited one or more physicians. Physician recruiting was successfully implemented by two-thirds of the grantees that undertook it. Retention was not as successful. Physician recruitment is an ongoing activity that hospitals must fund after the grant is over if they continue to experience difficulty retaining physicians.

Outpatient Services. Twenty-three of the 44 case-study grantees proposed or attempted to add 32 outpatient services using grant funds. Most of them implemented the proposed services. The 44 case-study grantees added the following 25 outpatient services:

- Eight primary care clinics
- Five specialty clinics
- Four industrial medicine programs
- Two cardiac rehabilitation programs (two more grantees planned cardiac rehabilitation programs using grant funds, as a result of strategic planning, and will add them after the grant period)
- Two pulmonary rehabilitation programs
- Two outpatient chemotherapy programs
- One mental health clinic
- One Rural Health Clinic (one more grantee will open its clinic after the grant period)

Rural Health Clinics were the least likely outpatient service to be implemented. Of six grantees proposing or considering this type of project during strategic planning, only one actually implemented it, one will implement a Rural Health Clinic after the grant period is over, and the rest abandoned the idea during the planning stage. The main reasons for abandonment were lack of physician support (physicians did not want to supervise **midlevel** staff) and difficulties recruiting physicians to work in such clinics. The Rural Health Clinic that was implemented began seeing patients 13 months after grant award. One year after the clinic opened, it was seeing about 12 patients a day. After 2 years, use had increased to 25 patients a day, a level that is self-supporting.

Primary care clinics were easier to implement (eight were opened or supported with grant funds), and two of the grantees originally proposing a Rural Health Clinic instead opened a primary care clinic.

Pulmonary rehabilitation programs, started by two grantees, have been disappointing; very few patients use the service at either hospital.

With the exception of Rural Health Clinics, outpatient services were planned and implemented, and all but the pulmonary rehabilitation programs appear to be self-supporting. All the outpatient services will be retained.

Patient Services. Eighteen case-study grantees proposed and implemented a variety of “patient service” projects, including health education, support groups, screening **services**, discharge planning, case management, and Lifelines--devices worn around the neck by frail people that can be used to summon help. Health education projects included general

outreach and programs focusing on diabetes, prenatal care, cancer awareness, and mental health. All but one grantee implemented planned patient services.⁶ Most of the programs were popular within their communities, but two grantees do not plan to continue patient services after the grant support ends because the services do not bring in revenue directly. A third grantee may cut back its outreach program.

Inpatient Services. Fourteen case-study grantees identified adding an inpatient service as a grant project goal, and 11 of them developed such services during the grant period. The case-study grantees introduced the following inpatient services:

- Three long-term care units
- Two hospices
- Two inpatient psychiatric units
- One chemical dependency unit
- One ventilator unit for ventilator-dependent patients
- One physical therapy program
- One respite program

Use of inpatient services has been good, except for the ventilator unit, which is losing \$200,000 a year. The grantees believe the services are important contributors to institutional revenue. In general, grantees planned and sometimes implemented the inpatient service

⁶The exception was a grantee that changed scope. Instead of introducing a case-management program, it converted to a primary care clinic.

projects before the grants were received, and the projects often required major contributions from the hospitals in addition to the grant funds because they involved **construction**.⁷

One of the three inpatient services never implemented was an obstetric service to be provided by 'a nurse-midwife. The grantee recruited and paid for a registered nurse to take nurse-midwife training but decided not to introduce the service because initial support for the idea had dissipated and no obstetrician could be found to provide backup. A new administrator hastened abandonment of the project because of the risks involved and the lack of physician and nursing staff support.

Another grantee planned to augment its outpatient chemotherapy grant project with inpatient chemotherapy and a hospice after the outpatient program was established, but has not done so. The hospice has been planned and will be added after the grant period, but the inpatient chemotherapy was abandoned because this service is increasingly provided only by tertiary care hospitals.

A third grantee canceled its plan to add swing beds because the conditions its State imposed were too onerous.

Strategic Planning and Needs Assessment. Most of the 13 case-study grantees proposing planning wanted to develop a strategic plan by undertaking a market analysis and needs assessment, and sometimes space planning, to guide priorities for the next few **years**.⁸ Four

⁷**Building** costs often far exceeded the funds available from the grant. Grants were awarded for up to \$50,000 a year, but there was a limitation on capital expenditures--no more than one-third of the grant could be spent on such items.

⁸**Other** grantees undertook needs assessments for the services that they had proposed; these were more limited than the strategic planning projects discussed here.

hospitals proposed planning for two multiple hospital consortia. Success is measured according to whether grantees ever did any planning and whether they were able to implement any of priorities identified in the planning process.

Nine grantees conducted needs assessments, mostly during the first year of their projects. Six of these also conducted space planning using outside consultants. These nine hospitals then went on to implement a variety of services and continuing activities, such as physician recruiting and health education, which are discussed in other sections.

The experience of the grantees in two consortia was more mixed. One consortium of two hospitals that are managed by the same management contractor planned a common nursing pool based on a careful examination of their joint needs. The nurses at one hospital refused to accept the concept, so it was shelved. These two hospitals subsequently developed quality assurance programs following the same Total Quality Improvement approach, introduced or upgraded home health services, and shared specialists. The other consortium included six hospitals, of which two were grantees. This consortium was to investigate consolidation of services within a county, but the project was never fully implemented because, despite occasional meetings, the member hospitals were never able to reach agreement on anything. The two grantees subsequently spent their grants independently on a variety of activities, such as physician recruiting and setting up primary care clinics.

Home Health, Day Care, and Assisted Living. Six grantees initially proposed or later added to their objectives home health, day care, and assisted living projects, for a total of

10 such projects. Grantees completed planning 8 of these 10 projects and implemented only 5 of them during the grant period: 4 home health agencies and a child care program.

Neither of two adult day care projects was implemented (although one may be after the end of the grant period), nor was the assisted living facility (planning was never completed). One of five proposed home health agencies was not implemented (although it may be implemented shortly after the grant period ends), and one of the two proposed child care programs was not implemented (moreover, the one that was implemented loses money).

Projects such as adult day care, child care, and assisted living require certification that the facilities and staff meet certain quality standards, and often require financing for construction, which may be difficult for small hospitals to achieve. None of the grantees proposing these types of projects had the requisite facilities, and all had to plan to renovate or build facilities to reach specified standards. Grantees were unable to secure financing for these programs during the grant period.

Emergency Services. All five of the case-study grantees that proposed to upgrade their emergency medical services did so. These upgrades included remodeling one emergency room to improve efficiency, conducting four training programs to upgrade ambulance staff to emergency medical technicians or paramedics for advanced life support, and adding two satellite ambulance stations to shorten response times to outlying areas. Although one of the advanced life support ambulance services was losing money at the end of the grant period, the grantee planned to continue it. Two other grantees explained that the improved emergency services brought in more patients, which was financially advantageous.

Routine Medical Transportation. Four grantees added or expanded routine medical transportation to bring patients to the hospital or physicians' offices. All of them plan to retain the service although it does not add revenues directly.

Summary. Strategic planning for individual hospitals was productive in most cases. It led to decisions about hospital expansion or renovation and introduction of a variety of services whose need had been identified and cost-effectiveness had been evaluated. The most easily implemented services appear to be outpatient services (except for Rural Health Clinics, which rarely got beyond the planning stage), patient services, emergency services, and regular medical transportation. Almost all inpatient services were implemented, but most had been planned before the grant was received and were implemented largely with hospital funds. Physician recruitment was widespread and two-thirds of grantees that attempted to recruit had some success; retention, however, was considerably less effective. Four out of five home health agencies were implemented; the fifth was not fully implemented after 3 years of planning. Day care projects were difficult to implement, because of problems with financing and facility construction, and had the lowest implementation rate.

Use of services after implementation varied, but two stood out because of low patient use: outpatient pulmonary rehabilitation and an inpatient ventilator unit. Patient services stood out as the least likely services to be retained after grant funding ends.

3. Successful Grantees

The previous section focused on specific objectives and their likelihood of being implemented. Another way of assessing success is to evaluate how many grantees successfully

planned and implemented projects that patients used and that added to hospital revenues.

The key questions are:

- . Was the project implemented largely as planned?
- . Was the service used?
- . Did the service add revenue to the hospital directly?
- . Will the hospital maintain the project?

We can group the 44 case-study grantees (one-fourth of all 1989 grantees) into several categories, according to their responses to these questions:

- Project planned and implemented largely according to initial plans, used regularly and financially successful (15 grantees, or 34 percent)
- Project planned and implemented largely according to initial plans, with mixed success (3 grantees, or 7 percent)
- Project planned and implemented largely according to plans, not adding revenues, but will be retained because the hospital believes it is important for the community or the hospital's image (9 grantees, or 20 percent)
- Project planned and implemented largely according to plans, not adding revenues, will not be fully retained (2 grantees, or 5 percent)
- Major components were modified (2 grantees, or 5 percent)
- Major components were abandoned, but some remaining components will be retained (8 grantees, or 18 percent)
- Major components were never implemented despite grantee attempts (5 grantees, or 11 percent)

The first category, into which about one-third of grantees fall, indicates complete project success. The last two categories, which comprise 29 percent, indicate considerable lack of project success. The remainder (41 percent) fall into the middle categories, with varying success at implementation and varying use and profitability.

Grantee size seemed to affect success. A larger proportion of the large grantees (those with 60 or more licensed acute care beds) than of the medium-sized and small grantees was fully successful (44 percent, 39 percent, and 30 percent, respectively). A larger proportion of small grantees was least successful, compared to the medium-sized and large grantees (40 percent, 28 percent, and 25 percent, respectively). Some small hospitals were fully successful, just as some large hospitals failed to implement a project in the 3 years, however. This variation can be attributed to variations in management ability and economic conditions.

4. Problems and Successes in Implementing and Maintaining Projects

Success at implementing the grant projects after 3 years varied. The types of problems case-study grantees experienced in implementing and maintaining the projects and the factors contributing to success during the second and third years are the subjects of this section.

Each case-study grantee described only one or two implementation problems, but in aggregate the grantees faced a variety of different problems. (See Table IV.3.) The leading problems were disagreements or lack of coordination within a hospital or with other providers that led to implementation being delayed, modified, or abandoned; difficulties recruiting and retaining qualified physician and nonphysician clinical staff; and lack of patients. These problems were reported by some grantees in the first year, but a higher proportion mentioned

TABLE IV.3

PROBLEMS ENCOUNTERED DURING SECOND AND THIRD YEARS
OF GRANT PROJECTS BY CASE-STUDY GRANTEEES

Problem	Number of Grantees	Percent
Part or All of a Grant Project Could Not Be Implemented or Was Delayed Because of Disagreements or Inability to Coordinate	11 ^a	26 %
Nonphysician Clinical Staff Recruiting and Retention Problems	7 ^b	16 %
Physician Recruiting and Retention Problems	8	19 %
Too Few Patients	7 ^c	16 %
Reimbursement or Billing Problems	5 ^d	12 %
Difficulty with Certificate or Need or Certification as a Home Health Agency	3 ^e	7 %
Change in Administrator Delayed Project	2	5 %
Building Delays	2	5 %
Equipment Breakdown	2	5 %
Physician Recruiting Delayed Other Project Activities	2	5 %
Miscellaneous Problems	4	9 %
No Problems	4	9 %
Number of Grantees	43	100%

SOURCE: Case study site visits and telephone contacts.

NOTE: Some grantees identified more than one problem.

^a**Nurse** midwife project abandoned (1); nurses refused to join a pool with another hospital (2); administrator and physicians could not agree (3); physicians did not cooperate in recruiting of other physicians (1); radiology tele-net program delayed because of coordination problems (1); consortium members could not agree on joint activities (2); lack of cooperation with Title III agency (1).

^b**Mental** health (1); substance abuse (1); home health nurses (2); physical therapist and ancillary staff (1); nurse practitioner (1); industrial medicine (1).

^c**Ventilator** unit (1); outpatient mental health for elderly (1); pulmonary rehabilitation (2); cardiac screening of youth (1); van; wellness program (1).

^d**Cardiac** rehabilitation (1); inpatient psychiatric care (1); outpatient mental health; Lifeline (1); ventilator unit (1).

^e**Home** health agency certification (2); certificate of need delay (1).

these problems in the second and third years. Administrative problems with certification were mentioned less often in the second and third years, presumably as grantees either received the certification or abandoned the goal of introducing the service.

Grantees resolved some of the problems they described. For example, many recruited physicians. **Other** grantees described improvements in their reimbursement rates resulting from seminars that pinpointed trouble spots and efforts to work with one billing person who specialized in the service. Grantees were sometimes able to increase patient referrals to their grant-funded service by increasing the project director's contacts with local physicians or other providers. Improvements in communication within hospitals and with other providers were often mentioned as a positive side effect of the grant projects.

Factors that made the project run smoother were described by some of the case-study grantees visited in their second or third grant years. They mentioned the following factors as helpful:

- Building the clinical team's enthusiasm, quality, teamwork, and management skills (5 grantees)
- Successful recruiting resulting from improved recruiting strategies (5 grantees)
- Getting outside help, for example, with an application for certification as a home health agency, and with strategic planning (3 grantees)
- Improving cooperation within and between hospitals (3 grantees) and community support (2 grantees)
- Improving billing methods to maximize reimbursement (2 grantees)
- Outside funding that made building possible (2 grantees)

- * Increased use of the grant-funded service (2 grantees)
- Having a good management plan (2 grantees)

5. Consortia

Applicants for grants had the choice of applying as a consortium to follow common goals, rather than as individual hospitals. Forty grantees in 11 consortia received grants. The goals of these consortia included:

- Developing and consolidating shared services and strategic planning for members of multihospital systems
- Improving management
- Recruiting and training staff

One consortium project was completed after 1 year and 10 were completed after 3 years. Three of the 10 consortia were visited. One consortium was a group of three facilities with a common owner; one of the members closed and was sold during the grant period. The second was a group of two hospitals, both managed under contract by the same management group. The third was a consortium of six hospitals in a geographic area; four members did not have Rural Health Care Transition grants.

None of the three case-study consortia operated as a full consortium, but two of them undertook some activities in common. For example, the consortium of commonly owned grantees shared a recruiting effort, purchasing a mailing list and developing comparable

recruiting materials. The consortium of commonly managed hospitals shared in the purchase of recruiting and marketing materials and subsequently shared specialists.

For the rest, the consortium members either undertook similar activities independently or ignored each other after failing to reach agreement. For example, in the consortium of commonly owned grantees, both hospitals conducted needs assessments and space planning, using the same, approach, coordinated by a system coordinator; subsequently they both implemented aspects of their plans. The consortium of commonly managed grantees acted independently to implement the same quality assurance program. They had been unable to reach agreement on implementing a common nursing pool. The consortium of geographically associated grantees never agreed on any consortium activities and implemented entirely independent grant activities.

The case-study grantees highlight the difficult process successful consortia must go through: defining common goals, reaching agreement on procedures, and working together on implementation. Some of the consortia not in the case-study sample were able to implement common programs: an updated management information system that provided information needed to make prudent decisions about the hospitals' future, staff education and equipment to improve the quality of care provided, and a tele-radiology program.

D. GRANT EXPENDITURES

Rural Health Care Transition grantees were eligible to receive grant funds of up to \$50,000 per year for 3 years, although not all grantees requested the full amount per period or funding for the full 3 years. In 1989, the Health Care Financing Administration awarded

\$8.1 million in Rural Health Care Transition grants, and in the subsequent 2 years awarded \$7.4 million and \$6.3 million, for a total of \$21.8 million.

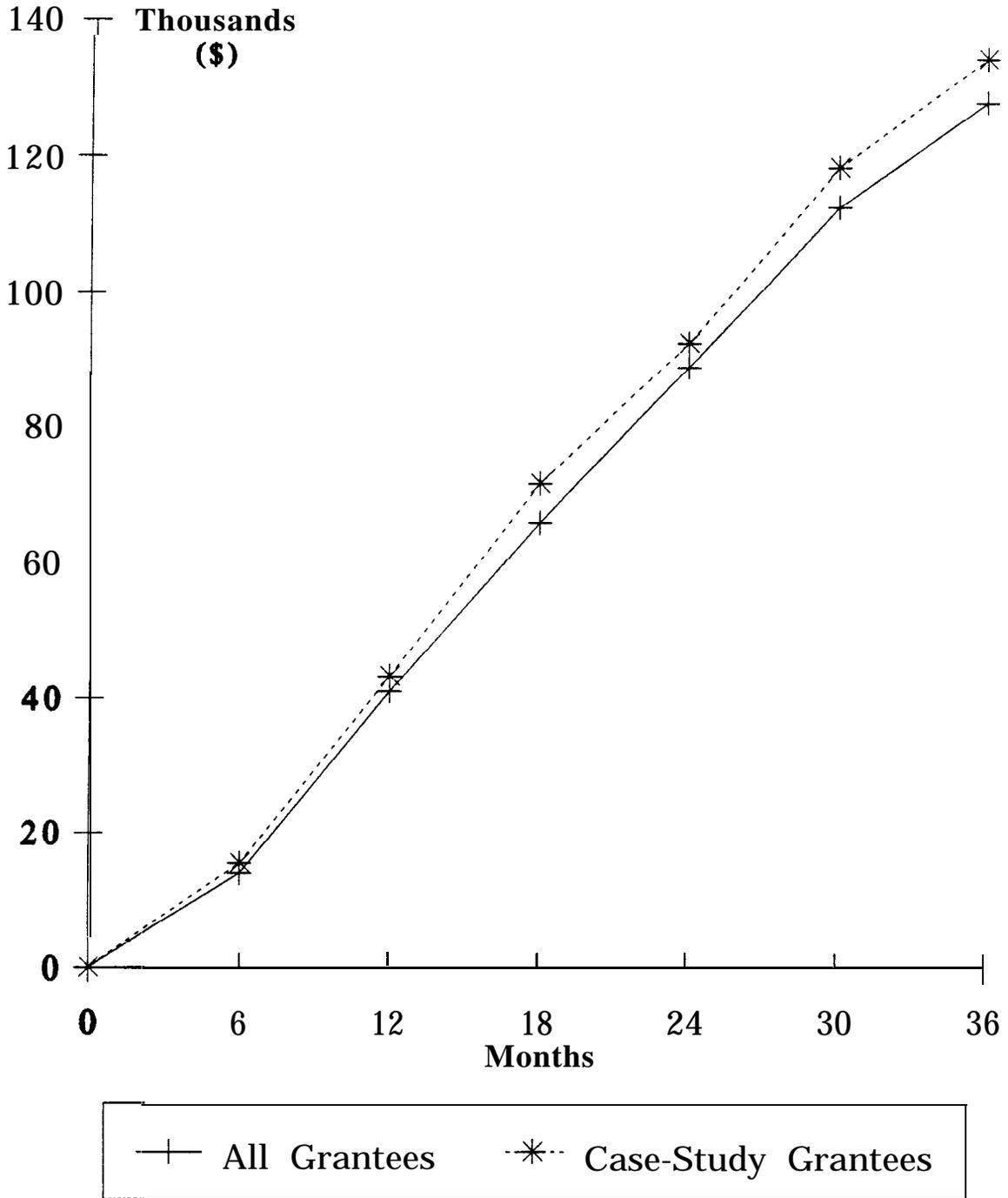
The grantees started up slowly, with average expenditures of only \$13,964 in the first 6 months of their projects. Implementation then speeded up, with average expenditures of \$27,117 in the next 6 months. After that, projects moved steadily ahead, with expenditures of between \$23,100 and \$24,700 every 6 months for the next 18 months. Reported expenditures were lowest in the last 6 months (**\$15,370**), because grantees reported expenditures before the end of the period. Figure IV.2 shows the average grantee expenditures over **time**.⁹

Of the full \$21.8 million allocated to **RHCT** grants, grantees reported spending a total of \$20.7 million (95 percent) during the first 34 months of their **3-year** projects. As Figure IV.3 shows, the greatest expenditure was for staff salaries and fringe benefits (45 percent), which could include reimbursement for the project director or clinical staff providing a grant-funded service. The next highest expense was for capital items (15.5 percent), for example, renovation of existing space for outpatient clinics or purchase of equipment such as ambulances and cardiac monitors.” Contracts for services other than physicians, for example, physical therapy services,, architectural plans, and recruiting agency fees, absorbed almost 14 percent

⁹The case-study grantees spent a little more than the average grantee, as Figure IV.2 shows. This is partly because case-study grantees were selected disproportionately from grantees who appeared to be doing well, in order to identify factors associated with successful grant project implementation.

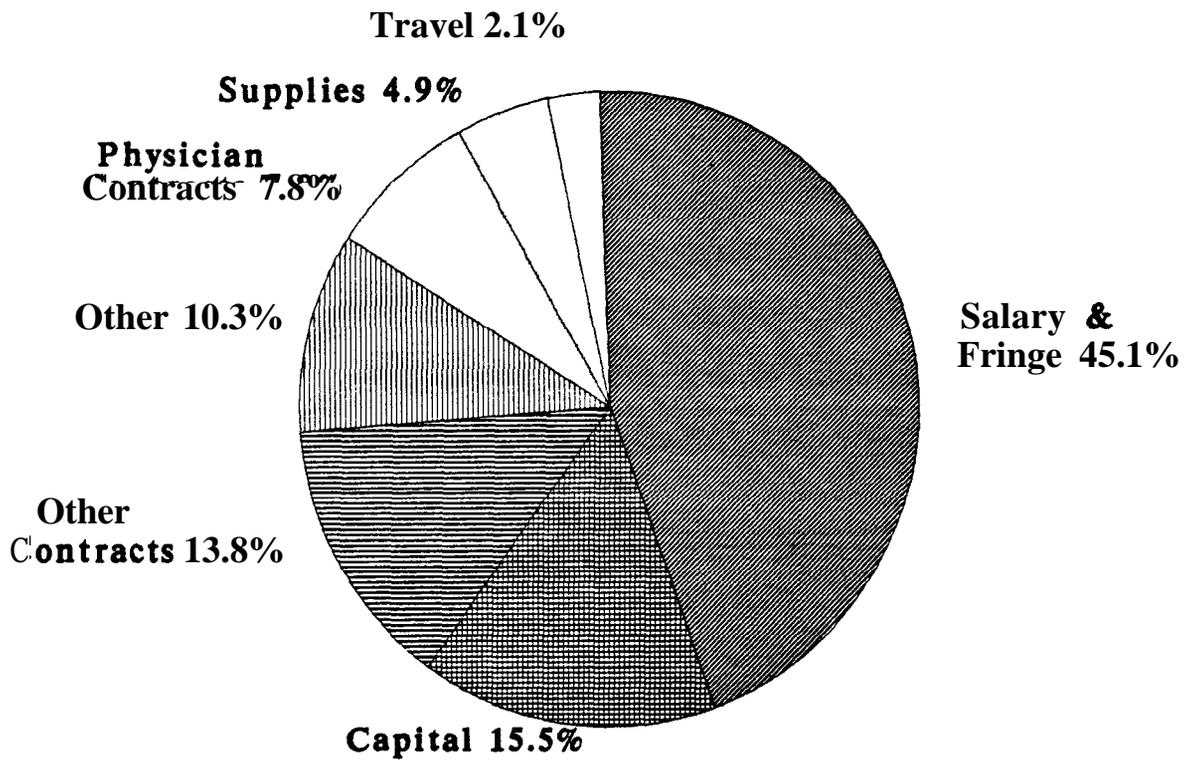
¹⁰The grant program imposed a maximum limit of 33 percent over the life of the grant on capital items.

FIGURE IV.2
GRANT EXPENDITURES PER GRANTEE



Source: Grantee Expenditure Reports.

FIGURE IV.3
TOTAL GRANT EXPENDITURES BY TYPE



Total Expenses: **\$20,719,832**

Source: Grantee Expenditure Reports.

of expenses, and physician contract payments (for example, emergency room physician contracts) **absorbed** nearly 8 percent. Supplies (for example, medical supplies and drugs) absorbed 5 percent, and travel, a further 3 percent. Ten percent of expenses went to miscellaneous items.

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V. THE GRANT PROGRAM'S EFFECT ON INTERIM OUTCOMES AND INTANGIBLES

The second criterion for a successful project is that grantees must achieve interim project outcomes. We have already found that two-thirds of the grantees were able to implement their projects; we will now examine whether they achieved interim outcomes that may produce positive financial outcomes in the coming years. In this chapter, we examine the direct and indirect effects of the grants on: (1) local access to care--including the number and types of new services opened and the number of physicians recruited; (2) improvements in quality of care; (3) the community and other providers; and (4) hospital morale and other intangibles.

A. THE EFFECT ON LOCAL ACCESS TO CARE

1. Direct Impacts

Improving local access to care is likely to improve a hospital's financial strength in later years. The grant projects can directly improve local access to care by introducing new services or recruiting physicians. Indirect effects of the grants on local access to care, such as opening a new service that in turn attracts new physicians, will be examined in the next section.

The direct effect of the grant program on local access can be measured by utilization of new or upgraded services funded by the grant program.⁷ Grantees reported implementing or upgrading 304 services with their grants--30 inpatient services; 15 1 outpatient services;

⁷Measuring local access to care with utilization figures assumes that area residents could not obtain these services locally before the grant projects were implemented. For most new services, this assumption is reasonable. See Section C.

27 home health services; and 96 transportation, support, and education services (see Table V.1).² The inpatient services implemented most frequently with grant funds were swing beds and nursing home services, while emergency room and physical therapy services were the most frequently implemented outpatient services. Overall, the most frequently implemented services were patient and community education programs.

All of the inpatient projects involved opening distinct patient units. Because inpatient mental health services have been operating the longest, on average, they generally improved access to care **earlier**.³ The grantees planned these services before they received their grants and were able to implement them very quickly. In contrast, the swing bed services and nursing home services have been in operation for less than a year, on average. These projects took longer to implement because they were planned during the grant period, and construction or renovation prevented swift implementation.

As a direct result of the grant program, an average of 471 patients per month now receive specialized inpatient health care services locally (see Table V.1). Of all inpatient services implemented as a result of the grants, mental health services have the highest level of patient utilization per month. The shorter average length of stay in mental health units (compared to nursing homes or ventilator dependent units) means that they can treat more patients **per** month.

²**Based** on the grantees' sixth project progress report, which was submitted by 132 grantees. Thirty-one other, nonclassified services were also reported implemented.

³**Mental** health services include psychiatric units and units for the treatment of substance abuse.

TABLE V.1
SERVICES IMPLEMENTED WITH RHCT GRANT FUNDS

Type of Service	Number Implemented or Upgraded	Average Length of Time in Operation (Months)	Average Number of Patients Served or Number of Visits Per Month
Inpatient (Patients)			
Swing beds	11	6	7
Nursing home	7	9	28
Mental health	5	33	31
Pulmonary rehabilitation	5	21	7
Ventilator dependent units	2	19	4
Total Inpatient (Mean or Weighted Sum)	30	15	471
Outpatient (Visits)			
Emergency room services	26	11	421
Physical therapy	25	15	711
Outpatient surgery	20	12	6
Cardiac clinic (including rehabilitation)	16	13	71
Mammography	15	10	70
Primary care clinic	15	10	559
Rural health clinic	8	13	461
Ear, nose, and throat clinic	7	18	150
Oncology/chemotherapy	6	17	75
Outpatient mental health clinic	5	14	72
Mobile health clinic	4	23	510
Occupational therapy	4	21	178
Total Outpatient (Mean or Weighted Sum)	151	13	47,712

TABLE V. 1 (continued)

Type of Service	Number Implemented or Upgraded	Average Length of Time in Operation (Months)	Average Number of Patients Served or Number of Visits Per Month
Home Health/Hospice (Visits)	27	16	443
Total Home Health/Hospice (Mean or Weighted Sum)	27	16	11,961
Transportation, Support, and Education (Patients)			
Patient and community education	39	19	654
Wellness programs	18	15	55
Social service/outreach	12	10	60
Emergency transportation	10	16	80
Nonemergency transportation	10	21	83
Adult day care	7	11	15
Total Transportation, Support, and Education (Mean or Weighted Sum)	96	16	28,951

SOURCE: Sixth Project Progress Report, 132 grantees reporting.

In general, services that do not require physicians or direct physician supervision (home health, physical therapy, mammography, and occupational therapy) have been operating longer because they did not experience start-up problems with physician recruitment. This suggests that the grantees can achieve positive financial effects more quickly from projects that do not require physicians. Among outpatient services, mobile health clinics have operated for the longest period of time on average (23 months), while primary care clinics have operated for the shortest (10 months).

In total, 47,712 outpatient health care visits per month are now made as a result of the RHCT program. Physical therapy services have the highest utilization levels, averaging more than 700 visits per month. In contrast, outpatient surgery projects only serve six patients per month on average--which reflects the high number of hospitals doing outpatient surgery only one day a month.

The grantees also implemented 96 transportation, support, and education projects that serve, on average, 28,951 patients per month. The patient education and service projects serve the highest number of patients per month (654 clients), while the adult day care programs serve the fewest (15 clients). In addition, 27 grantees implemented home health agencies that now provide 443 visits on average, or 11,961 visits per month in total.

It should be noted that these increases in utilization will not always correspond to changes reported in overall hospital utilization. For example, a hospital may open a primary care clinic as a separate corporate entity and not report the increase in its hospital statistics on outpatient

utilization. Another example is opening a nursing home unit that increases inpatient utilization, but not acute care utilization.

Although implementing new or enhanced services is an important element in improving access to health care, the gain is only temporary if the services are discontinued at the end of the grant program. Furthermore, if the services are not self-supporting by the end of the grant program, they may become a financial drain on the hospital in the future, which conflicts with the Congressional goals.

The vast majority of grantees intended to continue these services after the grant program ended (see Table V.2). Four patient education projects, two adult day care projects, and one inpatient mental health project were going to be completely discontinued--just 2 percent of the projects implemented. Increased access to care resulting from the grant program will be largely maintained after the program has ended.

Whether a project improves a hospital's financial viability, however, depends on the project's ability to cover its costs. Projects' ability to support themselves varies widely--two-thirds of all projects were financially self-supporting by the end of the grant period. However, three-fourths of the inpatient and outpatient services were self-supporting. All grantees implementing swing beds, outpatient physical therapy, and outpatient occupational therapy services reported that the projects are financially self-supporting, and a high proportion (over 80 percent) of the grantees implementing **nursing** homes, home health services, outpatient surgery, cardiac clinics, mammography services, and rural health clinics reported that their programs are financially self-supporting (see Table V.2).

TABLE V.2
FINANCIAL STATUS OF RHCT-FUNDED PROJECTS
AT THE END OF THE GRANT PROGRAM

Type of Service	Number Implemented	Proportion that Are Financially Self-Supporting	Proportion that Were to Be Supported with Other Funds After Grant Ended	Proportion that Were Discontinued After Grant Ended
Inpatient				
Swing beds	11	100%	0 %	0 %
Nursing home	7	85 %	15 %	0 %
Mental health	5	40 %	40 %	20 %
Pulmonary rehabilitation	5	60 %	40 %	0 %
Ventilator dependent units	2	50 %	50 %	0 %
Total Inpatient	30	77 %	20 %	3 %
Outpatient				
Emergency room services	26	73 %	21 %	0 %
Physical therapy	25	100%	0 %	0 %
Outpatient surgery	20	RO %	20 %	0 %
Cardiac clinic (including rehabilitation)	16	81 %	19 %	0 %
Mammography	15	93 %	7 %	0 %
Primary care clinic	15	68 %	32 %	0 %
Rural health clinic	8	88 %	13 %	0 %
Ear, nose, and throat clinic	7	43 %	57 %	0 %
Oncology/chemotherapy	6	50 %	50 %	0 %
Outpatient mental health clinic	5	60 %	40 %	0 %
Mobile health clinic	4	so %	50 %	0 %
Occupational therapy	4	100 %	0 %	0 %
Total Outpatient	151	78 %	21 %	0 %
Total Home Health/ Hospice	27	89 %	11 %	0 %
Transportation, Support, and Education				
Patient and community education	39	20 %	70 %	10%
Wellness programs	18	61 %	39 %	0 %
Social service/outreach	12	67 %	33 %	0 %
Emergency transportation	10	70 %	30 %	0 %
Nonemergency transportation	10	20 %	80 %	0 %
Adult day care	7	43 %	28 %	28 %
Total Transportation, Support, and Education	96	29 %	65 %	6 %

SOURCE: Sixth Project Progress Report, 132 grantees reporting.

Only 20 percent of the grantees implementing patient and community education services and nonemergency transportation services reported that these services are financially self-supporting; most grantees nonetheless intend to continue these services after the grant program. The case studies indicated that most grantees intended to continue their education services; some hospitals, however, planned to cut back on these projects substantially because they could not afford to maintain the programs at the grant-funded level. At the start of these projects, grantees thought they would generate enough indirect revenue and goodwill to make them cost-effective, but none tried to measure these indirect revenue increases. When the grant funding ended, hospital administrators chose to discontinue major components of the projects. These projects, which were the most popular ones undertaken by the grantees, are expected to provide a much lower level of services in the future.

Another direct impact of the grant program on access to local health care is the number of physicians recruited with grant funds. The grantees reported recruiting a total of 64 physicians by 33 institutions using grant funds,⁴ the majority of whom were generalists and family practitioners (see Table V.3). Only 15 percent of the successful institutions were large hospitals (over 60 licensed beds); however, these large grantees recruited 27 percent of the physicians, for an average of 3.4 physicians per large hospital. In contrast, 33 percent of the successful institutions were small (less than 30 beds), and they recruited only 23 percent of the physicians, for an average of 1.4 physicians per hospital.

⁴132 grantees reporting.

TABLE V.3

PHYSICIANS RECRUITED WITH RHCT GRANT FUNDS

Physician Specialty	Number of Physicians Recruited	Number that Have Stopped Practice	Number that Were Recruited from Other Rural Areas
Total	64	7 (11 %)	28 (44 %)
Family Practice	33	4 (12 %)	18 (55 %)
General Medicine	11	1 (9 %)	6 (55 %)
Internal Medicine	7	1 (14 %)	1 (14 %)
Obstetrics/Gynecology	2	0 (0 %)	1 (50 %)
General Surgery	2	0 (0 %)	1 (50 %)
Emergency Medicine	2	1 (50 %)	(00%)
Psychiatry	2	0 (0 %)	0 (0 %)
Pediatrics	1	0 (0 %)	0 (0 %)
Ophthalmology	1	0 (0 %)	0 (0 %)
Other	3	(00%)	1 (33 %)

SOURCE: Sixth Project Progress Report, 132 grantees reporting.

If the hospital is to benefit financially from recruiting a physician, the physician must establish a practice in the area. By the end of the grant period, 11 percent of the physicians recruited with the grant funds had already stopped practicing in the area. Information gathered from the case-study grantees indicates that these physicians leave for a wide variety of reasons--for example, a newly recruited physician may have a conflict with another local physician, or the physician's spouse may not like the area. In addition, some of the newly recruited physicians are older and only intended to practice for a year or two when they arrived. None of the physicians reported leaving because it was not economically viable to practice in the area.

For the grant program to help alleviate the national shortage of rural physicians, recruited physicians should be recent graduates just entering the field or physicians previously practicing in metropolitan areas. However, 44 percent of the physicians recruited with grant funds--and 55 percent of the general and family practice specialists--were recruited from other rural areas. This high level of rural physician relocation casts doubt on the program's ability to alleviate the shortage of rural physicians; however, the program's ability to help really depends upon why the physician left his or her previous practice. Rural physicians leave their communities for a number of reasons, including: (1) high demand and competition for generalists and family practitioners in rural areas results in constant offers to rural physicians to relocate, increasing the probability that they will relocate; (2) poor communication between physicians and their communities results in physician dissatisfaction, and as a result, a willingness to relocate; (3) some communities do not plan realistically before recruiting (that is, they do not

determine if the area can support a physician), and as a result, physicians cannot make a practice financially viable, and (4) physicians have personal reasons for leaving. To the extent that physicians left their previous practice because it was financially unviable, this level of relocation within rural America is a positive effect of the grant--physicians are moving to areas where they can survive. However, to the extent that physicians are relocating because of miscommunication and competition, then the grant funds are not being used effectively to address rural health care problems. Given that the hospitals need to recruit physicians who will remain in the area and build a practice--which can take several years--using Federal tax dollars to fuel competitive subsidies might make the rural physician situation worse.

2. Overall Impacts

Indirect effects of the grant projects on local access to care are important impacts of the grant program. But because the grants can affect utilization in countless ways, these impacts are not always traceable. For example: (1) recruiting a physician who delivers babies may make it financially feasible for a hospital to offer ultrasound services and thus increase outpatient visits; (2) opening an outpatient chemotherapy unit may help a hospital recruit physicians attracted to a facility with “progressive” care and thus increase utilization; (3) offering an informative wellness program may improve a community’s perception of the quality of a hospital’s services, thus increasing residents’ willingness to use the facility. As these examples illustrate, the impacts can be numerous and varied. Asking grantees to report specific data for each potential impact would impose an enormous burden on them.

In lieu of imposing this burden, we instead review changes in overall hospital utilization and services' offered. These changes can result directly from the grant, indirectly from the grant, or be unrelated to the grant project. However, by comparing them to national data on small rural hospitals, we can comment on the likelihood that these changes are a result of the grant projects, while acknowledging that factors other than the grant projects may also be contributing to these observed changes. Appendix C presents data that examine the sensitivity of our results to reporting bias.

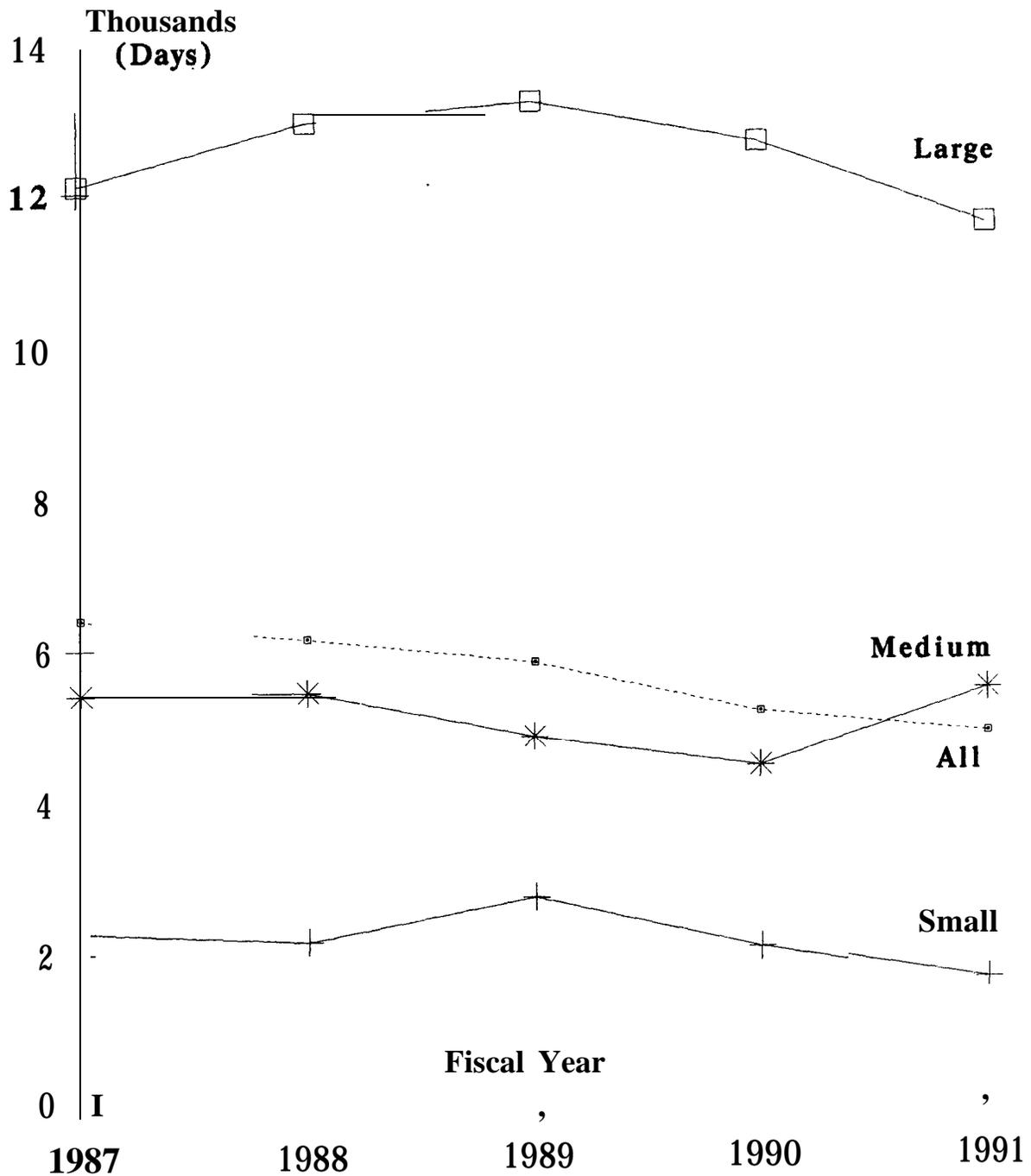
a. Inpatient Utilization

The median number of inpatient days decreased from 6,387 in 1987 to 4,879 in 1991, a 24 percent decrease (see Figure V.1). This decrease reflects the nationwide decline in total inpatient days since 1987 (*Hospitals*, 1992, p. 14). The decrease in inpatient days can be attributed to a number of factors, including advances in technology resulting in decreases in lengths of stay and reduced admissions. This decline was fairly steady from 1987 onward and accelerated after the grants were awarded in 1989, indicating that the grants did not reverse or inhibit this downward trend.⁵

The decline in inpatient days was most pronounced for the smallest grantees; their median inpatient days fell by 29 percent from 1987 to 1991, while the inpatient days for the largest grantees fell only 4 percent. Medium-sized grantees actually increased their inpatient days by 1 percent. For both the largest and smallest grantees, the decline was steady after the grants

⁵Most of the additional inpatient days resulting from the grant projects were for services other than acute care.

**FIGURE V.1
MEDIAN INPATIENT DAYS BY HOSPITAL SIZE**



Source: Grantee Background Information Reports.

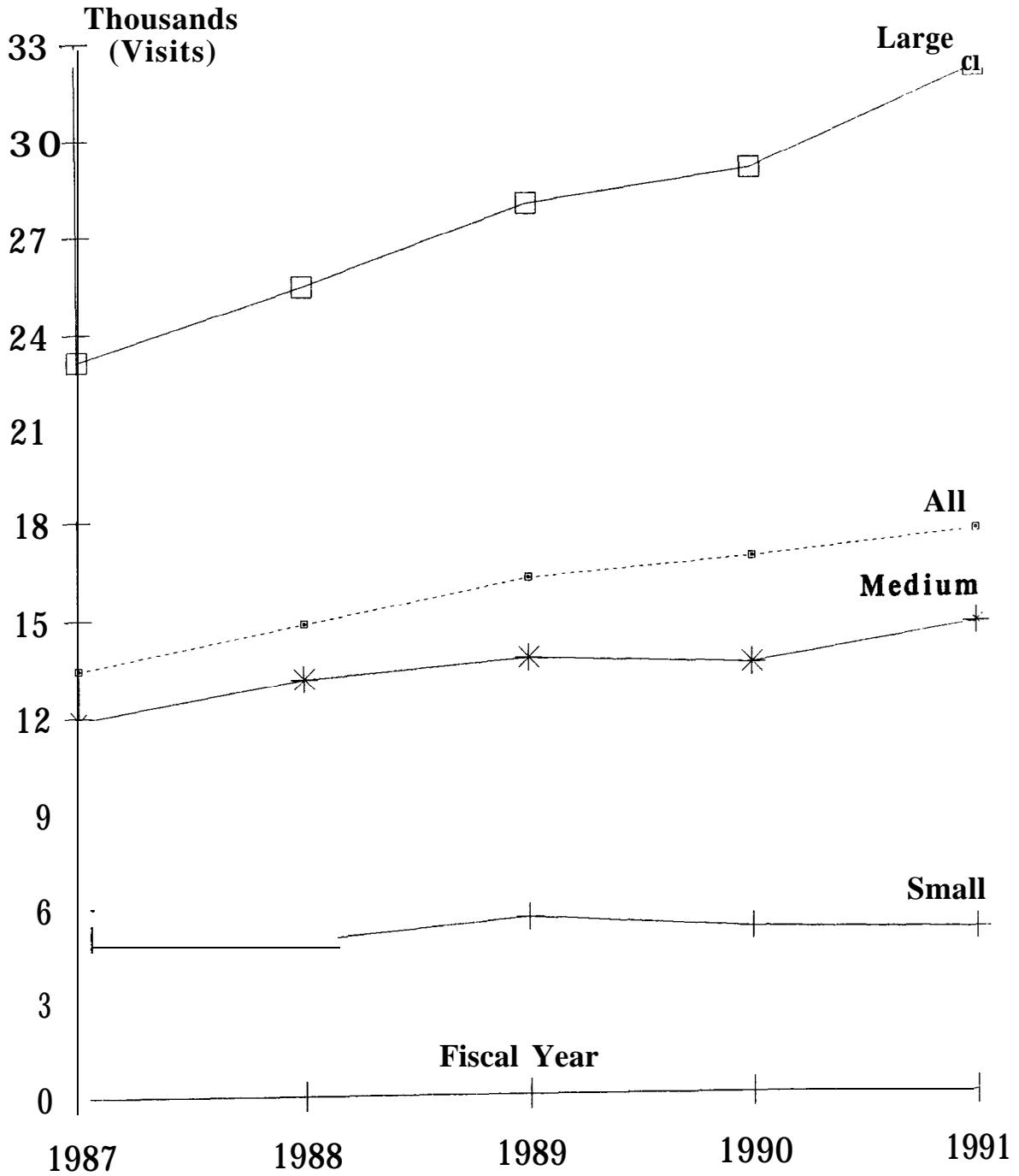
were awarded, while medium-sized grantees actually increased inpatient days from 1990 to 1991, suggesting that, indirectly, the grants may have slightly improved utilization for this group, although the increase could be an anomaly that will reverse in the future.

b. Outpatient Utilization

The average outpatient visits per hospital grew by 30 percent at grantee hospitals from 1987 to 1991, from 13,432 to 17,492 (see Figure V.2). This large increase reflects strong growth in outpatient visits nationwide. The grantees' 4 percent annual growth rate in average outpatient visits after the grants were awarded is slightly lower than the 5.5 percent national growth rate in 1989-1990 in total outpatient visits. The data suggest that the growth in outpatient visits is due to factors causing the nationwide increase in outpatient visits and that the grants projects are not having an independent effect.

The growth rate in outpatient visits for the smallest grantees during this 5-year period was only 10 percent, in contrast to 24 percent for the medium-sized grantees and 38 percent for the largest ones. For the smallest grantees the average number of outpatient visits declined from 1989, the year of the award (5,560 visits) to 1992 (5,062 visits), again suggesting that the grants did not affect these rates. The difference in outpatient visit growth rates between the largest and smallest grantees can be partially attributed to the growth in outpatient surgery, which typically is not offered at the smallest hospitals.

**FIGURE V.2
AVERAGE OUTPATIENT VISITS BY HOSPITAL SIZE**



Source: Grantee Background Information Reports.

c. New and Enhanced Services

The availability of inpatient services generally stayed the same or decreased during the grant period (see Table V.4). A small proportion of grantees expanded their swing bed and skilled nursing services (some through the grant program), while the percentage of hospitals offering intensive care units and cardiac care units decreased. Case-study data suggest this decline in the more specialized, intensive care services reflects low utilization of these services as well as difficulties obtaining specialized health care personnel to staff them.

The availability of diagnostic services generally improved at the grantee hospitals during the grant period, with 7 percent more of the grantees offering computerized axial tomography scanners and 11.5 percent more offering magnetic resonance imaging (see Table V.4). The proportion of hospitals offering ultrasound and mammography decreased slightly, but more hospitals upgraded or expanded these services than dropped them during the grant period.⁶

The availability of therapeutic services generally remained the same during the grant period. More than 10 percent of the grantees expanded their physical therapy and home health services, and another 5 percent added home health services. These were the largest changes, which are largely attributable **directly** to grant projects designed to add and upgrade these services. A few grantees (less than 4 percent) added occupational therapy and cardiac rehabilitation services, while a few others dropped speech therapy and respiratory therapy services, suggesting that, overall, there was no significant change in therapeutic services offered. The only service that appears to be declining is audiology--while almost 18 percent

⁶About 10 percent of grant projects introduced or upgraded mammography services.

TABLE V.4
NEW OR ENHANCED SERVICES SINCE 1989

	Hospitals Offering Service at Start of Award (N = 156)	Hospitals Offering Service at End of Award (N = 141)	Hospitals Expanding Service During Grant Period (N = 141)
Inpatient Services			
Swing beds	65.4 %	65.5 %	3.9 %
Skilled nursing beds	41.7 %	41.4 %	4.5 %
Intensive care units	64.1 %	56.1 %	1.3 %
Cardiac care units	46.8 %	40.7 %	1.9 %
Diagnostic Services			
Computerized axial tomography scanner	55.8 %	63.1 %	7.7 %
Magnetic resonance imaging	6.4 %	17.9 %	0.0 %
Ultrasound	87.1 %	86.5 %	13.6 %
Mammography	82.6 %	78.7 %	9.0 %
Therapeutic Services			
Physical therapy	82.1 %	82.0 %	16.7 %
Occupational therapy	28.2 %	29.5 %	4.5 %
Speech therapy	50.0 %	46.8 %	3.9 %
Respiratory therapy	75.6 %	73.9 %	5.8 %
Home health	42.9 %	48.2 %	10.3 %
Cardiac rehabilitation	18.6 %	20.9 %	1.0 %
Audiology	17.9 %	13.0 %	0.0 %
Chemical dependency rehabilitation	5.1 %	5.1 %	1.0 %

SOURCE: Grantee semi-annual background reports at start and end of **grant**.

NOTE: Not all grantees reported all variables. Sample size shown is the maximum number reporting.

offered this service at the beginning of the grant program, only 13 percent still offered it at the end, and no grantees expanded audiology services during the program.

d. Physician Services

The grant projects can affect physician supply indirectly in a number of positive and negative ways--for example, an outpatient oncology program may attract physicians to the hospital who view the program as an indication that the hospital practices progressive medicine; conversely, the oncology program may require a lot of the administrator's time, resulting in deteriorating physician-administrator relations and eventual physician departure.

Overall, grantees had a negligible increase in regular physician staff. At the beginning of the program grantees had, on average, 10.6 physicians on their regular staff; this grew by an average of less than one-quarter of a physician (2 percent), with a median net change in the physician staff of zero (see Table V.5). More hospitals lost physicians than gained them, and staff size at 29 percent of the hospitals did not change. At 12.9 percent of the hospitals, there was no change in the regular physician staff--the same physicians on staff at the beginning of the grant program were still present at the end.

Although grantees have not made much progress in recruiting physicians for regular staff, they have been able to recruit courtesy staff for clinics and emergency services. Hospital courtesy staff increased substantially over the grant period. The average number of courtesy staff grew by 2.24 physicians, from a baseline of 7.35 physicians--an increase of 30 percent. This increase reflects the large number of specialists hospitals are recruiting for outpatient

TABLE V.5

CHANGES IN PHYSICIAN SUPPLY, 1989-1992

	Other Hospitals (N = 124)	Hospitals with Physician Recruitment Grant Projects (N = 47)
Average Net Change in Number of Physicians-- Regular Staff	.23	1.06
Average Net Change in Number of Physicians-- Courtesy Staff	2.24	2.12
Percentage of Hospitals that Increased Regular Physician Staff Size	33.9 %	36.2 %
Percentage of Hospitals that Decreased Regular Physician Staff Size	37.1 %	40.4 %
Percentage of Hospitals that Experienced No Net Change in Regular Physician Staff Size	29.0 %	23.4 %
Percentage of Hospitals with No Regular Physician Turnover	12.9 %	4.3 %

SOURCE: Grantee semi-annual background reports.

NOTE: Not all grantees reported all variables. Sample size shown is the maximum number reporting.

clinics, as well as the increase in the number of hospitals contracting with physician groups to staff emergency rooms.

Although a few grantees were highly successful at recruiting physicians, the typical grantee with a **physician** recruitment grant project was no more successful in recruiting than any other grantee. To determine if the physician recruitment projects helped increase the number of physicians, we compared physician staffing at hospitals using grant funds to recruit at the beginning of the grant program to staffing at all other grantees.⁷ The average number of physicians on regular staff at the hospitals with physician recruitment grants grew by 1.06 physicians. As with all hospitals, however, the median increase was 0, and more hospitals lost physicians than gained them (see Table V.5).

Grantees with physician recruitment projects had more turnover in physician staff than grantees as a whole. Physician staff increased for 36.2 percent of grantees with physician recruitment grants, compared to 33.9 percent for all grantees. Conversely, it decreased for 40.4 percent of grantees with recruitment grants, compared to 37.1 percent for all grantees. Only 4.3 percent of the physician recruitment grantees experienced no turnover of regular physician staff (compared to 12.9 percent of all grantees). This level of physician turnover may reflect the fact that grantees expecting physician turnover chose physician recruitment projects from the beginning. We found no evidence to suggest that physicians left an area because of the local hospital's physician recruitment activities.

⁷During the course of the projects, half the grantees used funds for physician recruitment. The physician recruiting grants included here are all 47 grantees that started to recruit physicians in the first year of the project.

Although increasing the number of staff physicians is important for hospital revenue, the effective supply of physicians is important for improving access to care. Despite the increase in physicians, the average number of days a patient had to wait for an appointment with a primary care provider increased by a little more than one full day--from 5 to 6.3 days over the 3 years of the grant (see Table V.6). This increase may be explained by growth in the number of physicians who do not live in a community but do provide services at the hospital on a regular, periodic basis (such as courtesy emergency room staff), as well as by the replacement of physicians with new physicians who have lower productivity levels. In addition, the proportion of communities where primary care physicians accept new patients remained virtually the same from the beginning to the end of the grant period. The proportion with at least one physician prohibited from Medicare practice decreased slightly, suggesting that access to physician services for Medicare beneficiaries has improved.

To summarize, on average almost one out of every four grantees increased regular physician staff by one physician, and the number of physicians on courtesy staff increased by 30 percent. This increase has not improved waiting time for a primary care physician appointment but reflects increased local accessibility to specialized services. The grantees who used grant funds on recruitment were no more successful than other grantees at recruiting.

At small hospitals, however, small increases in physicians can make a large difference. The increase in physicians has affected hospitals' perceptions of their physician staff shortages--fewer of the grantees reported shortages at the end of their grant period than at

TABLE V.6

CHANGES IN THE EFFECTIVE SUPPLY OF PHYSICIANS

	At Award (N = 164)	At End of Grant Period (N = 143)
Average Number of Days to Schedule an Appointment with a Primary Care Physician	5.0	6.3
Proportion of Communities Where Primary Care Providers Accept New Patients	95.0 %	96.0 %
Proportion of Communities Where at Least One Physician Was Prohibited from Practicing for Medicare	4.0 %	2.0 %

SOURCE: Grantee background reports at start and end of grant.

NOTE: Not all grantees reported all variables. Sample size shown is the maximum number reporting.

the beginning (see Table V.7). Although the proportion reporting a physician staff shortage fell from 83 to 73 percent, almost the same proportion reported at the beginning and end of the grant period that their physicians worked more than 55 hours per week (a physician's average work week). This suggests that the combined small increase in regular staff and the increase in courtesy physician staff is helping relieve the physician shortage, but it is not reducing the number of hours physicians have to work.

e. -Other Health Care Professionals

The average number of health professionals on staff increased slightly, but for most types of health care professionals, the change was small (see Table V.8). The average increase in full-time equivalent physician assistants, respiratory therapy staff, and occupational therapy staff was each just one-tenth of a staff position. Put another way, 1 out of every 10 hospitals increased their staff by one full-time position. This increase is a positive trend, but it does not suggest that access to these professionals has been dramatically altered by the grant program.

The number of full-time equivalent registered nurses (RNs) on staff increased sharply during the period, from 25.1 to 30.1 RNs (see Table V.8). During the same period, the number of full-time equivalent licensed practical nurses (LPNs) decreased by one position, on average. These changes reflect a number of different factors, including the increased number of LPNs who obtain nursing degrees; the success of "grow your own" nursing scholarship programs; and the recession, which has made more nurses willing to take permanent staff positions to gain job security.

TABLE V.7
PERCEIVED CHANGES IN PHYSICIAN SUPPLY

	At Award (N = 164)	At End of Grant Period (N = 145)
Percent of Hospitals Reporting Physician Staff Shortages	83.0 %	73.0 %
Percent of Hospitals Where Physicians Typically Work More than 55 Hours/Week	57.0 %	56.0 %

SOURCE: Grantee background reports at start and end of grant.

NOTE: Not all grantees reported all variables. Sample size shown is the maximum number reporting.

TABLE V.8

HOSPITAL STAFFING, NURSES AND ALLIED HEALTH PROFESSIONALS

	Average Number of Full-Time Equivalent Staff	
	At Award (N = 165)	At End of Grant Period (N = 143)
Registered Nurses	25.1	30.1
Licensed Practical Nurses	12.6	11.7
Physician Assistants	.1	.2
Physical Therapy (Licensed or Certified Staff)	1.0	1.4
Respiratory Therapy (Licensed or Certified Staff)	2.1	2.2
Occupational Therapy (Licensed or Certified Staff)	.2	.3
Radiology (Licensed or Certified Staff)	3.7	4.1
Laboratory (Licensed or Certified Staff)	5.1	5.3

SOURCE: Grantee background reports at start and end of grant.

NOTE: Not all grantees reported all variables. Sample size shown is the maximum number reporting.

As we noted earlier, even small staffing changes can have a large impact at a small hospital. It is important to examine whether these changes affect hospitals' perceptions of their problems. These small staffing changes did affect hospitals' views. The proportion reporting a nursing staff shortage fell substantially over the grant period--from 73 percent to 56 percent, not surprising given the 20 percent increase in RN staff (see Table V.9). In addition, the proportion of hospitals where nurses typically work more than 40 hours per week fell from 29 percent to 22 percent, suggesting that the 20 percent increase in registered nurses decreased the need for nurses to work long hours at some hospitals. Despite these gains, the majority of grantees still reported a nursing staff shortage at the end of the grant period, but clear progress has been made.

Among the allied health professionals, the percentage of hospitals reporting a shortage fell from 70 percent to 58 percent, indicating that the small increase in allied health staff had a substantial effect on hospitals' perceptions of their problems. The percentage of hospitals where the staff works more than 40 hours per week only fell by one percentage point during the grant period, however. This suggests that there may be a need for overtime in laboratories which is not relieved by staff changes of this magnitude; a laboratory with only one staff member will require overtime from that person even if the nationwide shortage for laboratory staff is relieved.

f. Access to Posthospital Health Care Services

Another potential impact of the grant program is improving access to posthospital health care. Grantees who improve discharge services, implement swing bed and nursing home

TABLE V.9

PERCEIVED CHANGES IN HEALTH CARE PERSONNEL SUPPLY

	At Award (N = 164)	At End of Grant Period (N = 145)
Percent Reporting Nursing Shortages	73.0 %	56.0 %
Percent Where Nurses Typically Work More than 40 Hours/Week	29.0 %	22.0 %
Percent with Perceived Allied Health Professional Shortages	70.0 %	58.0 %
Percent Where Licensed Support Staff Typically Work More than 40 Hours/Week	19.0 %	18.0 %

SOURCE: Grantee background reports at start and end of grant.

NOTE: Not all grantees reported all variables. Sample size shown is the maximum number reporting.

services, or open home health agencies would be expected to improve access to posthospital health care' directly; however, other projects can produce spillover effects. For example, opening an adult day care center may decrease the demand for local nursing home beds, and in turn, open new beds for patients who require them after hospitalization.

Access to posthospital home health services improved during the grant period. Proportionately fewer grantees had difficulty arranging skilled home health care services (a decrease from 19 percent to 15 percent) and personal care/homemaker services (a decrease from 37 percent to 30 percent--see Table V.10). This small increase in accessibility is due in part to the grant program; three of the grant-funded home health agencies opened in areas that had experienced difficulty accessing skilled home health services. However, the majority of grantees that opened home health agencies (22 of the 27 grantees) did so in areas where grantees had not experienced trouble accessing posthospital care services for their patients before the grant. Although these new home health agencies are likely to improve hospitals' financial status (because Medicare pays for home health on a cost-reimbursement basis), the majority may not improve access to health care services. Case-study grantees adding home health services indicated that although access to home health care was available from agencies other than the hospital's home health agency, these agencies were distant. Local physicians preferred having a local home health agency, because it was easier to coordinate care and improve continuity of care between the hospital and the home.

The grantees' ability to discharge patients to nursing home beds remained virtually the same over the grant period because of nonavailability of beds, with 29 percent reporting

TABLE V.10

AVAILABILITY OF POSTHOSPITAL HEALTH CARE SERVICES

	At Award (N = 167)	At End of Grant Period (N = 144)
Discharge to Nursing Homes Typically Difficult Because of Nonavailability of Beds	28 %	29 %
Discharge to Medicare-Certified Facilities Typically Difficult	33 %	24 %
Arranging Skilled Home Health Care Services Postdischarge Typically Difficult	19 %	15 %
Arranging Personal Care or Homemaker Services Postdischarge Typically Difficult	37 %	30 %

SOURCE: Grantee background reports at start and end of grant.

NOTE: Not all grantees reported all variables. Sample size shown is the maximum number reporting.

difficulties at the end of the period, compared to 28 percent at the beginning.’ In contrast, fewer grantees reported difficulty discharging to Medicare-certified facilities. This decrease is due in part to grant-funded nursing home projects--three of the seven nursing home projects were in areas that had difficulty accessing Medicare-certified services.

g. Access to Emergency Services

The *raison d’être* for many rural hospitals in the eyes of their community is to provide emergency services; hence, the availability and utilization of emergency services were critical issues for many grantees.

The availability of emergency services generally stayed the same or improved at grantee hospitals. The proportion of hospitals with 24-hour, 7-day emergency room services remained virtually the same, while the proportion with continuous physician coverage of the emergency room increased substantially during the grant period, from 46 to 57 percent (see Table V. 11). This increase is consistent with a national trend to staff emergency rooms with contracted emergency physician groups (Williamson, Rosenblatt, and Hart, 1991). The average number of emergency room visits increased slightly, and the average response time for physicians to respond to an emergency room call decreased by a minute, both of which suggest slightly better access to emergency care.

One issue that some grant projects attempted to address is the inappropriate use of emergency services. Because residents lack access to physicians, many use the emergency

⁸This difficulty in accessing nursing home beds occurred despite the three grant-funded nursing home projects undertaken in areas where access to nursing home services was a problem at the beginning of the program.

TABLE V. 11

ACCESS TO LOCAL EMERGENCY ROOM

	At Award (N = 167)	At End of Grant Period (N = 144)
Percent of Hospitals with 24-Hour, 7-Day Emergency Room	98 %	99 %
Percent of Hospitals with Continuous Physician Coverage of Emergency Room	46 %	57 %
Average Response Time for Physicians when Emergency Room is Not Staffed	16.9 minutes	15.7 minutes
Average Number of Emergency Room Visits	5,108	5,368
Average Number of Emergency Room Visits Resulting in Hospital Admission ^b	673	674

SOURCE: Grantee background reports at start and end of grants.

NOTE: Not all grantees reported all variables. Sample size shown is the maximum number reporting.

“Only 138 grantees reporting at baseline, 126 at conclusion.

^bIncludes admission to other hospitals.

room for primary care--which is an expensive way to deliver primary care. If the projects were successful in eliminating inappropriate visits, the proportion of emergency room visits that resulted in hospital admission would have increased. However, this proportion remained the same during the grant period; approximately 13 percent of emergency room patients were admitted in the first year of award and in the final year of the grant. This result is consistent with the earlier findings indicating that access to local physicians has not improved.

h. Changes in Routine Transportation

Any increases in the supply of health providers or patient services will not help area residents unless they can use the services. One vital link in health service utilization is the availability of routine transportation to health care delivery sites. If patients do not have transportation, then making the service available will not improve access to care.

During the grant period, the availability of routine transportation changed in 22 percent of the grantee service areas. Three-quarters of grantees with a change reported that routine transportation services were started or expanded, but just over half reported that services were reduced or dropped. Indeed, in some areas routine services were both extended and reduced, as local providers changed their service areas and eligibility rules. Only 7 percent of grantees used their grant funds to develop routine transportation.

The case studies showed that availability of routine transportation for physician visits varies significantly, and the extent to which the transportation system works effectively varies as well. In some areas, there was no local transportation, yet health care providers did not feel this was a problem because family and neighbors generally took care of transportation

needs. In other counties, transportation was available for the elderly, but the cost was high (\$1.50 per mile) or the service was so unreliable that, effectively, there was no transportation, which caused problems accessing health care. Other areas had transportation systems that were **reliable** and inexpensive, but residents had to schedule a ride a day in advance, and many patients were not able to plan this far ahead. In contrast, one grantee had a transportation system that serviced different areas of the county each day of the week. This system worked very well because the local physician knew the schedule and planned his appointments to coincide with the transportation schedule. In short, the effectiveness of a routine transportation system for health care services depends on the cooperation of everyone involved--the transportation provider, the health care provider, and the patient--making it almost impossible to measure the grant program's impact on access to routine transportation.

B. THE EFFECT OF THE GRANT PROGRAM ON QUALITY OF CARE

A second interim outcome grantees set out to achieve was improving quality of care. By improving quality of care, grantees hoped that more local residents would use local hospitals (instead of traveling to distant institutions), which would in turn increase the institutions' profitability.

Quality of care may be measured in three ways: the structure, the process, or the outcome of care (Donebedian, 1980). Measuring the process and outcome requires gathering detailed data (such as medical records), which was unwarranted for this evaluation. The ultimate goal of quality improvements is attracting more patients to a hospital. In order to accomplish this, these changes in quality must be observed by the public. The public is not

usually aware of changes in the process and outcome of care, and it is unlikely that changes of this type will affect utilization of a hospital. However, improvements in the structure of care--for example, building improvements and higher nursing staff ratios--are more likely to be noticed and more likely to attract patients.

Grantees have improved their physical plants since receiving their awards. A large number undertook construction and renovation activities over the past 3 years, increasing the proportion that had renovated within the previous 10 years from 51.4 to 66.2 percent (see Table V.12). The majority of grantees that had renovated in the last 3 years had previously done so 10 to 20 years earlier, although a few that had not renovated in over 20 years at the start of the grant program did so during the grant.

The average age of some major equipment decreased during the period. The largest average change was the 2-year decrease in the average age of main radiology units, from 11 to 9 years (see Table V.12). The average age of chemistry machine analyzers and blood gas machines also fell, but by a negligible amount (approximately one month).

This slight updating of laboratory equipment, along with small staff increases discussed earlier, suggests that grantees upgraded laboratory services during the grant period. Indeed, 52 percent reported that it takes less time for a physician to receive laboratory results than it did at the start of the grant period. These improvements can in part be attributed to the Clinical Laboratory Improvements Act (CLIA), but since CLIA stipulated personnel requirements and not equipment requirements, the updating of equipment suggests that the grantees may be improving laboratory services in addition to the legislated improvements.

TABLE V.12

STRUCTURAL MEASURES OF QUALITY--BUILDING AND EQUIPMENT

	At Award	At End of Grant Period
Number of Years Since Last Major Renovation		
30 years or more	3.5 %	2.6 %
20 to 29 years	13.9 %	9.9 %
10 to 19 years	31.3 %	21.2 %
Less than 10 years ^a	51.4 %	66.2 %
Average Age (in years) of:		
Main radiology unit	11.0	9.0
Chemistry machine analyzer	3.8	3.7
Age of blood gas machine	4.5	4.2
Percent with Decreased Time for Physicians to Receive Laboratory Results	N.A.	52.0 %

SOURCE: Grantee background reports at start and end of grants.

^aIncludes all grantees who are in the process of renovating.

N.A. = not applicable.

A second structural measure of quality is personnel training and availability of these personnel to patients. Grantees improved their relative level of nursing staff training during the period:-the median ratio of FTE registered nurses (RNs) to licensed practical nurses (LPNs) increased from 1.84 RNs to 2.21 RNs for every one LPN.⁹ (See Table V.13.) This increase is part of a nationwide trend; the proportion of registered nurses on nursing staffs increased from 55 percent in 1981 to 65 percent in 1989, while the proportion of licensed practical nurses fell from 20 percent to 14 percent (Public Health Service, 1992).

The ratio of RNs to staffed beds increased from .56 to .62. For a hospital with 30 staffed beds, the number of FTE RNs increased by 1.8, or by an additional staff nurse on the floor for 72 hours of a 168-hour week. This change can affect a hospital in two ways: first, if the increase in staff nurses reduces the need for on-call nurses, then the stress level for management is likely to decrease and help the goal of management improvement. Second, if this increase allows nurses to spend more time with patients, then the perception of the hospital's quality of care will likely increase and may result in more utilization.

In summary, the data indicate that grantees slightly improved their building, equipment, and staffing during the grant period, suggesting that they have made improvements in structural measures of quality of care. It is unlikely that these improvements are due solely to the grants, given national trends in staffing and the enactment of the Clinical Laboratories

⁹The average ratio of RNs to LPNs increased from 3.05 to 7.35. This large increase reflects the phasing out of LPN staff at some hospitals, which decreases the denominator of this ratio substantially.

TABLE V.13

STRUCTURAL MEASURES OF QUALITY--PERSONNEL

Median	At Award (N = 153)	At End of Grant Period (N = 138)
Ratio of FTE Registered Nurses to Licensed Practical Nurses	1.84	2.21
Ratio of FIE Registered Nurses to Staffed Beds	.56	.62

SOURCE: Grantee background reports at start and end of grant.

Improvement Act during this period; however, the data do suggest that grantees' finances may improve after the grant period.

c. EFFECT ON **THE** COMMUNITY AND OTHER PROVIDERS

1. Meeting Community Needs

Most grantees appear to have implemented their proposed objectives and claim to have met the needs identified in their proposals (see Chapter IV). We also asked other health care providers located near the 11 case-study grantees visited in 1992 whether they felt the grant project had met a community need. Five were confident that the services (three clinics, one nursing home, and one cardiac rehabilitation service) were an important addition to the area, and one commented that the grant-funded strategic planning and needs identification process had been advantageous to both the hospital and the community.

A few of the grant projects were not considered helpful by local providers. Two were described as good ideas that simply had not worked out (an outreach clinic for seniors that was little used and a nurse-midwife project that was not implemented because of lack of support). Providers had mixed opinions about whether a nursing pool concept for two hospitals in a consortium had been a good idea. The nurses also had mixed opinions; the pool was not implemented because of lack of support from them.

We also asked grantees whether they had made progress in meeting the needs of their areas during the grant period. Virtually all of them asserted that they had improved their ability to meet their areas' needs, although a few identified continuing areas of need, such as preventive services and additional primary care.

2. Effect on Other Providers

Almost half of the case-study grantees (19 out of 43) believed that the grant project had affected other local health care providers positively. Twenty thought the grant project had no effect, and four believed the grant project had drawn patients away from another provider.

Most of the positive effects on other providers described by grantees came about through the availability of additional services, which provided opportunities for improved coordination and closer relationships. For example, a psychiatrist was recruited who was available to supervise other therapists and provide mental health services to nursing home patients. Several grantees described improved relations with the local health department or mental health agency as a result of the grant project. These relationships improved as access to health care improved, especially for indigent patients. For example, a rural health clinic, a medical transportation service, and a joint venture to provide mental health services all improved relations with other providers as well as access to care. One project added skilled nursing beds to a hospital, which caused reduced revenues at a local nursing home early in the grant period and friction between the hospital and the nursing home. But this grantee ended the grant period on a positive note by sharing services (a contract **dietician**) with the nursing home and lending the hospital's physical therapist to the nursing home.

Because of physician recruiting projects, several grantees described increased mutual referral among area providers (mostly physicians), an economic advantage for all parties.

Another important effect of the grant projects was increased quality of services at other providers. Some of this increase resulted from competitive pressure on the other provider to

improve quality. For example, a hospital that opened a skilled nursing unit had goals of increasing access to skilled nursing home care and improving the quality of that care in the area and believed it had achieved both goals. The local nursing home initially lost a few patients but then responded by upgrading its services and working more closely with the grantee. Two grantees upgraded ambulance services to advanced life support level, which improved the quality and level of care of other local ambulance services. In one case, a neighboring community upgraded its ambulance service to maintain an equivalent level of service and not lose patients; this resulted in increased competition with the grantee hospital. In another case, neighboring ambulance services were upgraded after the grantee hospital opened paramedic and emergency medical technician training classes to employees of other providers, so all area ambulance services could benefit.

Only four grantees believed their grant projects had reduced patients for another provider. One was hopeful that it would be able to consolidate with the other provider, a hospital 16 miles away that lost patients using the grant-funded van service to travel to the grantee hospital. One grantee that opened an inpatient chemical dependency treatment unit attracted patients who might otherwise have used another unit in a hospital 30 miles away, but the grantee reported that this did not result in patient losses at the other hospital because there were plenty of patients needing treatment. Two grantees that developed clinic services with their grants may have reduced the number of patients attending other local clinics.

3. Relationships Between Hospitals and the Community

Rural hospitals can only remain in business as long as they have the support and cooperation of their local communities and physicians. Without community use of and payment for a hospital's inpatient and outpatient services, the hospital will lose money. If the hospital is losing money on operations, the community must provide major subsidies through financial or in-kind contributions (for example, equipment or labor and, most commonly, hospital auxiliaries) to keep the hospital open. Physicians can support a hospital in a variety of ways, including referring patients to its outpatient clinics, using the hospital laboratory rather than setting up their own laboratories or sending tests to outside laboratories, and supporting physician recruitment efforts. Any lapse in support, either from the community or local physicians, will affect the hospital's viability.

Rural hospital administrators have to ensure that a hospital maintains good relationships with physicians and the community. They do this by informing the community of new developments at the hospital (such as receipt of a grant) through radio spots, newspaper articles, and public-speaking engagements. They also conduct open houses and health fairs at the hospital or at local events, **maintain** contacts with schools and other institutions, and provide free or reduced-price services. Hospital managements maintain relations with physicians through formal structures, such as joint committees of the board and physician staff, and through informal communications.

Among the 44 case-study grantees, substantial financial support was available through local taxation, hospital foundations, and from the community (including the hospital auxiliary).

Sixteen of 44 grantees received more than \$100,000 per year from one or more of these sources. There were few changes, however, in financial support during the 3-year grant program, and none were attributable to the grant program.

Support from local taxation was available primarily for publicly owned facilities. Fifteen of 21 publicly owned facilities received tax support regularly, ranging from \$22,000 to \$600,000 per year, for purposes such as indigent care, building maintenance, and equipment purchases. Only two private hospitals received tax subsidies. One was a facility owned by the local government but operated by a private, not-for-profit corporation, which received an average of \$300,000 a year. The other received a voluntary and variable contribution of less than \$25,000 per year.

Other sources of local financial or in-kind support included hospital foundations, individual donations, and activities supported by hospital auxiliaries. Twenty-seven of 44 case-study grantees received one or more of these kinds of financial support: 10 received less than \$25,000 per year, 9 received between \$25,000 and \$100,000, and 8 received more than \$100,000. Seven grantees had active foundations, and one had an endowment. Among these eight grantees, three received more than \$100,000 per year.

In-kind support from hospital auxiliaries was almost universal (only two grantees did not have volunteer programs, one because of past confidentiality problems). Many grantees reported mutual cooperation between the hospital, the community, and physicians in such activities as health fairs, community support for special projects, and physician and hospital

employee involvement in civic clubs and schools. Hospital-initiated activities of this nature by the case-study grantees did not change during the grant period.

D. THE EFFECT OF THE GRANT ON INTANGIBLES AND THE FUTURE

Because of the short time frame of the grants, it may be unreasonable to expect the grant projects to affect the hospitals tangibly. More likely, the grants will produce more intangible impacts in the short run. We asked grantees to describe both short- and long-term expected effects of the grant. Not surprisingly, they found positive things to say about the grants' effects on staff morale and hospital image in the community. Perhaps more surprisingly, a large proportion believed the grants would have long-term effects on the hospitals' future.

1. Morale of the Hospital Staff

Early in the grant projects, many grantees said the grant award had a positive effect on the morale of hospital staff, the board, the physicians, and the community. They also said their hospital's image improved after the hospital won the grant. Later in their projects, grantees spoke about the enhanced image resulting from the services implemented with the grant and from grant-funded community needs assessments.

Several grantees, usually those with strategic planning components in their grant projects, said the grant improved communications among the community, physicians, and the hospital by encouraging discussion about the hospital's future and the community's needs.

One of the most dramatic testimonials on the grants' effects came from a hospital that was near closure when it received the grant. The administrator (new when the grant was received)

described the grant as “a catalyst that helped make the financial turnaround.” Another grantee attributed his improved understanding of the hospital’s circumstances to the semi-annual reporting requirement under the grant, which forced him to think about necessary change.

2. Long-Term Effects

Two-thirds of the case-study grantees contacted at the end of their grant projects (21 of 34) believed that the grants would have a long-term effect on their hospitals. These long-term effects would result primarily from increases in hospital patients, including those using the grant-funded service (8), those using the services of physicians recruited through the grant program (6), those brought to the hospital through its grant-funded routine medical transportation (1) and emergency medical transportation (1), and those attracted to the hospital because of its improved image (1). Other expected long-term effects would result from a variety of grant effects: the information base developed through grant-funded strategic planning (3), quality improvements contributing to accreditation (1), ability to hire second-shift nurses because of a grant-funded day care program (1), and indirect improvement through ancillary services (1).

Three grantees were unsure whether the grant would have a long-term effect on the future of their hospital because they had not yet succeeded in recruiting physicians whom they expected to have a long-term effect. Another was unsure whether the improved hospital image would have a long-term effect. Among the nine case-study grantees that did not believe the grant would have a long-term effect, three described philanthropic goals of their grant projects (a cardiac rehabilitation program, mental health service for seniors, and an advanced

life-support ambulance) which will not necessarily contribute substantially to long-term hospital viability, **but** will improve access to care.

VI. THE EFFECT OF THE GRANT PROGRAM ON FINANCIAL AND MANAGERIAL STATUS

Congress mandated that the **RHCT** grant projects should demonstrate methods of strengthening the finances and management of rural hospitals. Because hospitals are important in assuring access to primary, emergency, and acute care services, financially weak and poorly managed health care institutions must be strengthened to survive in today's competitive health care market. If access to health care services in **rural** areas is to be maintained, rural hospitals must be financially viable and well-managed.

A. EFFECTS ON FINANCIAL CAPABILITY

As we noted in Chapter II, the grant projects can affect grantees' finances in a number of ways. By recruiting a physician, improving service capacity, or improving the perceived quality of care, a grantee can increase hospital utilization, which in turn should improve the hospital's finances.

Financial viability has many different dimensions; as a result, several measures can indicate whether a hospital's financial situation has improved. Ideally, the grants should improve all measures of financial strength. Realistically, however, the grants are small (up to \$50,000 per year for up to 3 years) and the program has not been in existence long enough to affect many of the measures. For example, if a grantee used grant funds to implement a new clinic that opened in the last few months of the **3-year** program, it is unlikely that any financial measures would be significantly affected, even if the clinic earned a profit from the first day of

operation. With this caveat in mind, we examine trends in grantees' revenues--the measures most likely to have been affected by the grant program. Next, we examine measures of grantees' operating margins and short-run liquidity--the next most likely measures to have been improved by the grant program. Finally, we examine hospitals' long-run financial positions. We do not expect to find effects for this measure, but we examine it nonetheless because it is an important facet of the grantees' financial status.

1. Explanation of Financial Data

This section presents annual financial data. Because hospitals record financial data on a fiscal-year basis that can begin in any calendar month, we allocated fiscal-year data to "financial analysis years" for the period 1987 to 1991. The analysis year 1987 includes financial data for fiscal years ending between July 1, 1987, and June 30, 1988; the analysis year 1988 includes financial data for fiscal years ending between July 1, 1988, and June 30, 1989; and so forth. Within this analytic time frame, the grant program began during the 1989 analysis year, and any financial impacts would be found in the 1990 and 1991 analysis years, with 1991 being the first full year to reflect program impacts.¹ We present data for the years 1987 through 1991 in order to evaluate any changes in trends before and during the grant period.

In using the financial data, we measure medians rather than means for two reasons. First, the national data used for comparison are medians. Second, many grantees--especially the smaller institutions--are financially volatile and can have extreme financial measures (outliers)

¹In analysis year 1990, some grantees' fiscal years include part of the pre-award period (that is, prior to September 1989).

for reasons other than hospital performance. Because there are fewer than 180 grantee hospitals, measures like means, which are sensitive to outliers, would be misleading if there were any extreme values. A median is not sensitive to a few extreme values.

Because we present data for a 5-year period that included considerable inflation in medical costs, we have deflated the revenue data to distinguish real changes from inflationary ones. To deflate revenues we used the Medical Care Component of the Personal Consumption Expenditures index, with a base year of 1987.² Because grantees' fiscal years do not correspond to the annual (calendar) index, a composite index was calculated for each hospital, apportioning the index by the number of months of the hospital's fiscal year in each calendar year. For example, if a hospital's fiscal year ended in April 1988, the composite index would be computed as 8/12 of the 1987 index and 4/12 of the 1988 index.

The financial data used in this analysis were provided by grantees in their semi-annual reports. The detailed data is from the 44 case-study grantees. Appendix D provides specifics on the sensitivity of financial measures to reporting bias, and the national data drawn from *The Comparative Performance of U.S. Hospitals: The Sourcebook*, which are compared to grantees' data.

2. Trends in Hospital Revenue

a. Inpatient Revenue

A small number of the grant projects were expected to increase inpatient hospital revenue, either directly by offering new inpatient services or indirectly by improving quality of care or

²See Appendix D for more details.

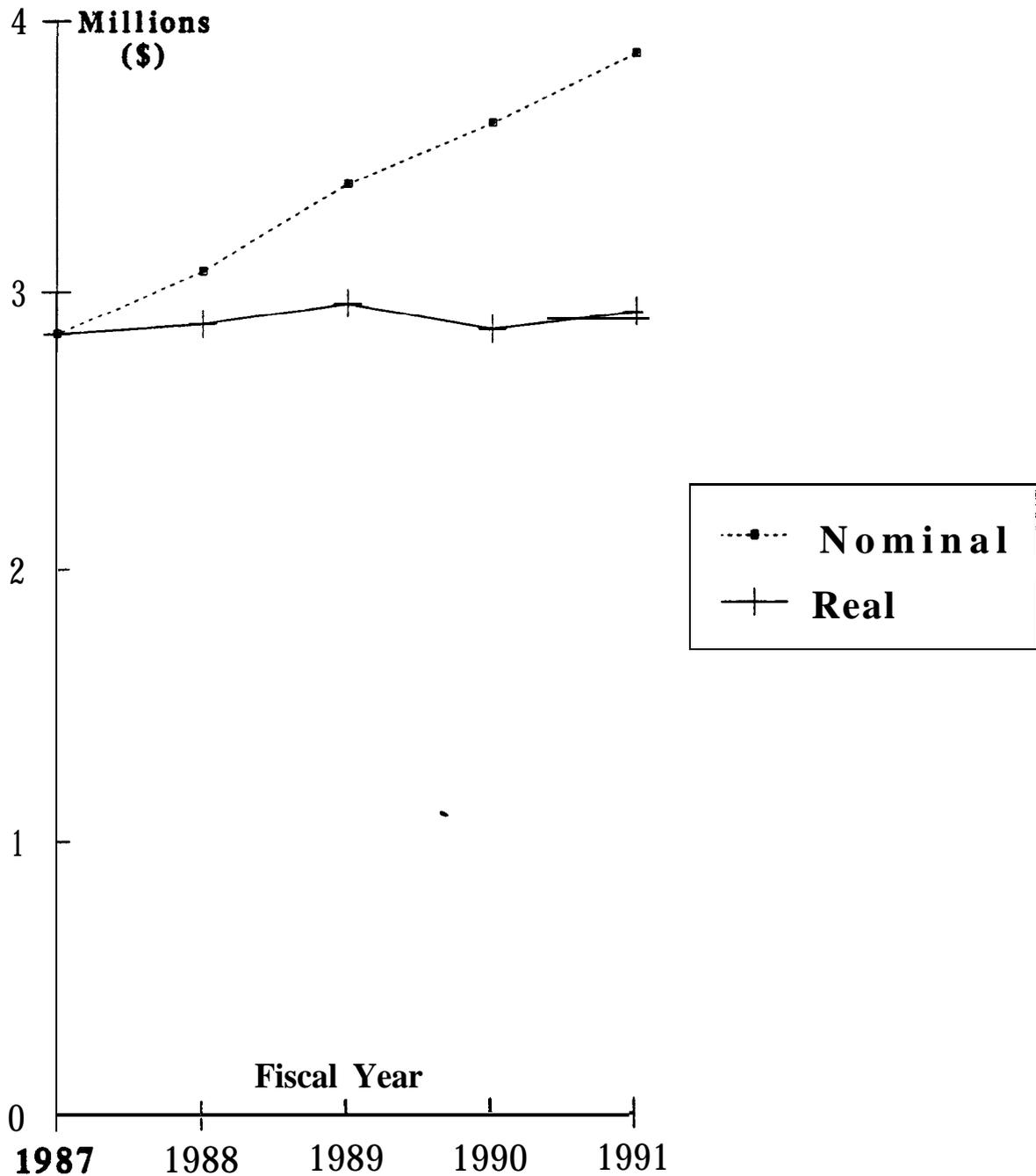
recruiting additional physicians, which would attract more patients. Although nominal inpatient revenue increased both before and during the grant period, inpatient revenue remained fairly constant from 1987 to 1991 after the figures were adjusted for inflation (see Figure VI.1). The modest rise in inpatient revenue in 1991 (2 percent) is similar to changes in inpatient revenue throughout the period, and it is probably not related to the grant projects.

Inpatient revenue for the smallest hospitals (those with fewer than 30 licensed, acute care beds) decreased from 1987 to 1991 (see Figure VI.2).³ Inpatient revenue for the smallest hospitals fell by a quarter of a million dollars, which after adjustments for inflation, represents a 33 percent real decrease, and the decline in real dollars actually accelerated between 1990 and 1991. This indicates that whatever effect the grants had, it was not large enough to increase total inpatient revenue at the smallest hospitals.

In contrast, both medium-sized hospitals (those with 30 to 60 licensed, acute care beds) and large hospitals (those with more than 60 licensed, acute care beds) experienced steady increases in their unadjusted inpatient revenue since 1988. After adjustments for inflation, their revenue fell from 1987 through 1989 but then climbed back to the 1987 level during 1991. This mirrored a national trend for all hospitals in inpatient admissions, which dipped in 1989, recovered in 1990, and fell again slightly in 1991 (*Hospitals, 1992*, p. 14). Grantees' changes in inpatient revenue were of a much larger magnitude than the national trend in inpatient admissions, both in the downward and upward direction, suggesting that the increases in inpatient revenue are due to factors other than the grant program.

³Some of the smallest hospitals do not keep accounting data that separate inpatient and outpatient revenue. In these cases, both inpatient and outpatient revenue are included.

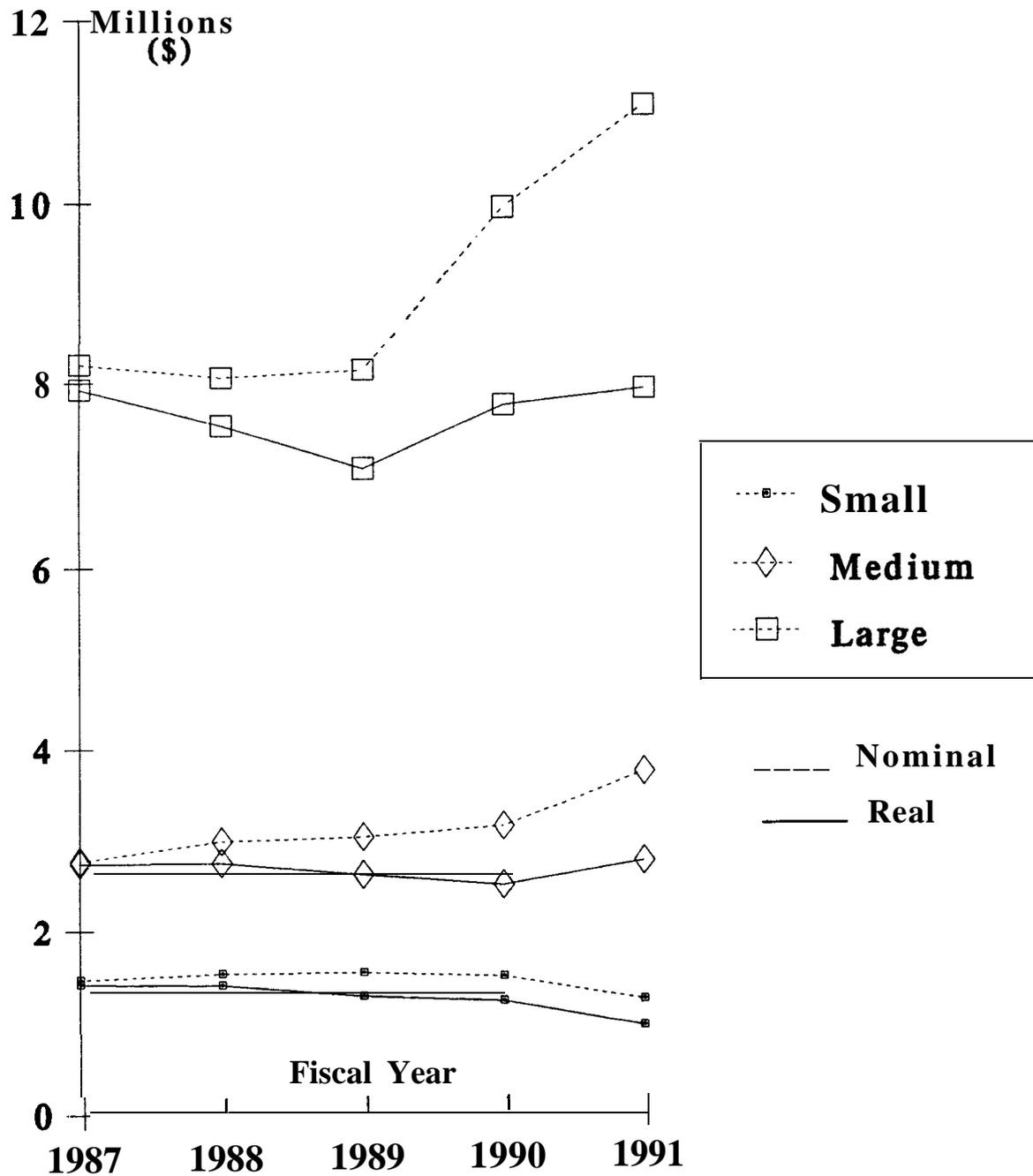
FIGURE VI.1
MEDIAN INPATIENT REVENUES FOR ALL GRANTEEES



Note: Real revenues are expressed in constant 1987 dollars using the Personal Consumption Expenditures Price Index for Medical Care to deflate figures.

Source: Grantee Background Information Reports.

**FIGURE VI.2
MEDIAN INPATIENT REVENUES BY HOSPITAL SIZE**



Note: Real revenues are expressed in constant 1987 dollars using the Personal Consumption Expenditures Price Index for Medical Care to deflate figures

Source: Grantee Background Information Reports.

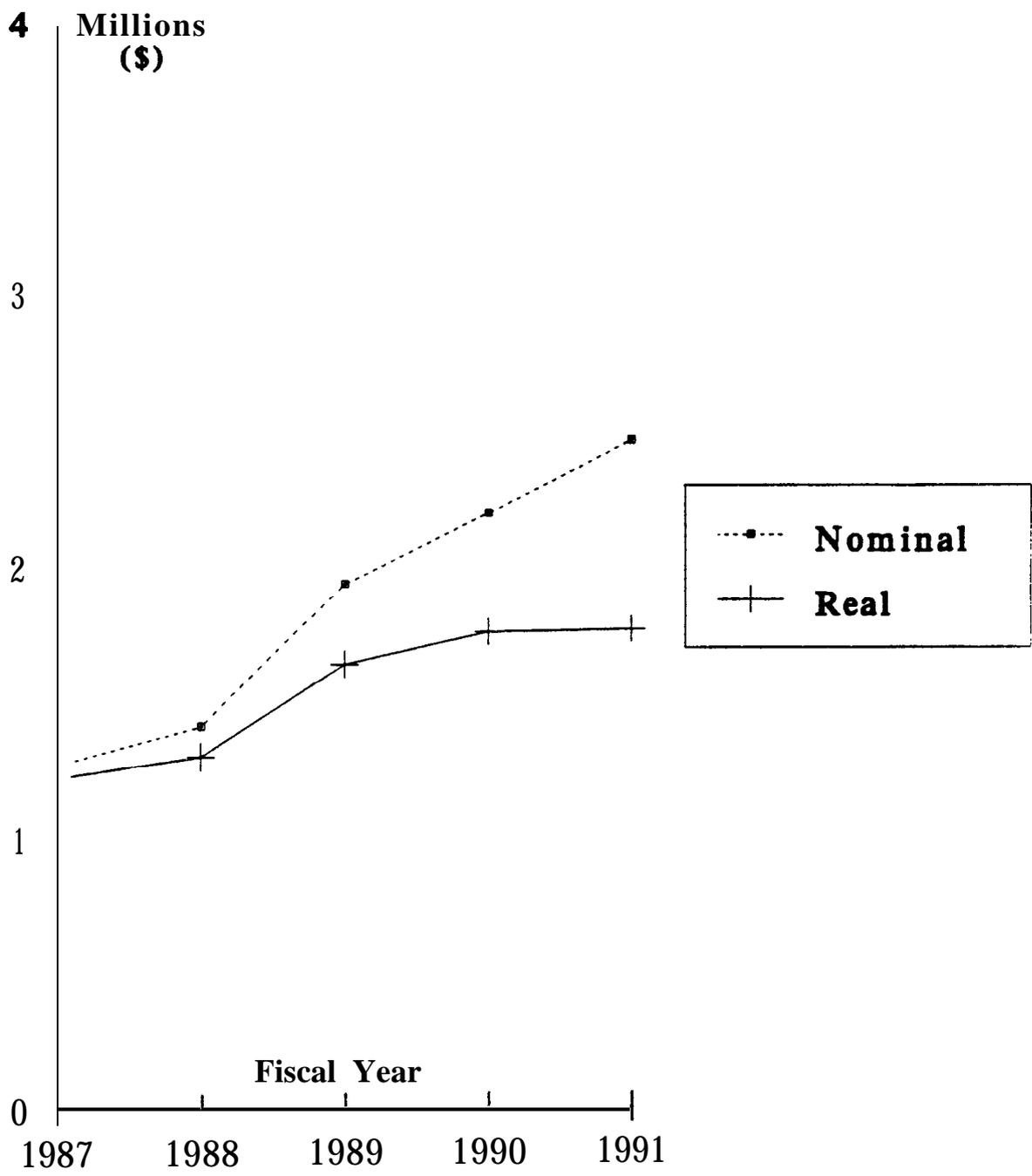
Few of the case-study grantees expected the projects to increase inpatient revenue. Very few grant projects (11 percent of all projects) were intended to increase inpatient utilization directly. Among the case-study grantees with inpatient projects, each added only six to eight inpatient beds in the grant project. Case-study grantees with inpatient projects expected the projects to have small impacts on inpatient revenue, but they also expected the new service to help pay for overhead costs, which in turn would help increase profits on Medicare patients and patients of other prospective payers.

There is no evidence that the grant program affected inpatient revenue. This result was expected--few grantees undertook projects that would directly increase inpatient revenue, and the grantees that did undertake such projects did not expect large increases. The smallest grantees, however, experienced decreases in inpatient revenue during this period, suggesting that their financial circumstances worsened and the grants did not check this decline. It is possible that some projects will have positive effects on inpatient revenue over a longer period than was observed here.

b. Outpatient Revenue

A large proportion of grantees intended to increase outpatient revenue with their grant funds, either directly, by introducing a new service (43 percent), or indirectly, by recruiting additional physicians to see outpatients or provide referrals (30 percent). Both nominal and deflated outpatient revenue grew substantially during the **5-year** period from 1987 to 1991, but the inflation-adjusted outpatient revenue grew at a faster rate in the 2 years before the hospitals received their grants (see Figure VI.3). Deflated outpatient revenue grew by

**FIGURE VI.3
 MEDIAN OUTPATIENT REVENUES FOR ALL GRANTEES**



Note: Real revenues are reported in constant 1987 dollars using the Personal Consumption Expenditures Price Index for Medical Care to deflate figures.

Source: Grantee Background Information Report.

6 percent from 1987 to 1988, and by 25 percent from 1988 to 1989. The rate of increase then fell to 7 percent from 1989 to 1990, and to 1 percent from 1990 to 1991. Nationally, rural hospital outpatient visits followed a similar pattern, increasing 6 percent from 1987 to 1988, 10 percent in 1988 to 1989, and 5.5 percent from 1989 to 1990 (American Hospital Association, 1992). Outpatient visits are also expected to grow at a substantial rate in 1991, although the data are not yet published (*Hospitals, 1992*, p. 14).

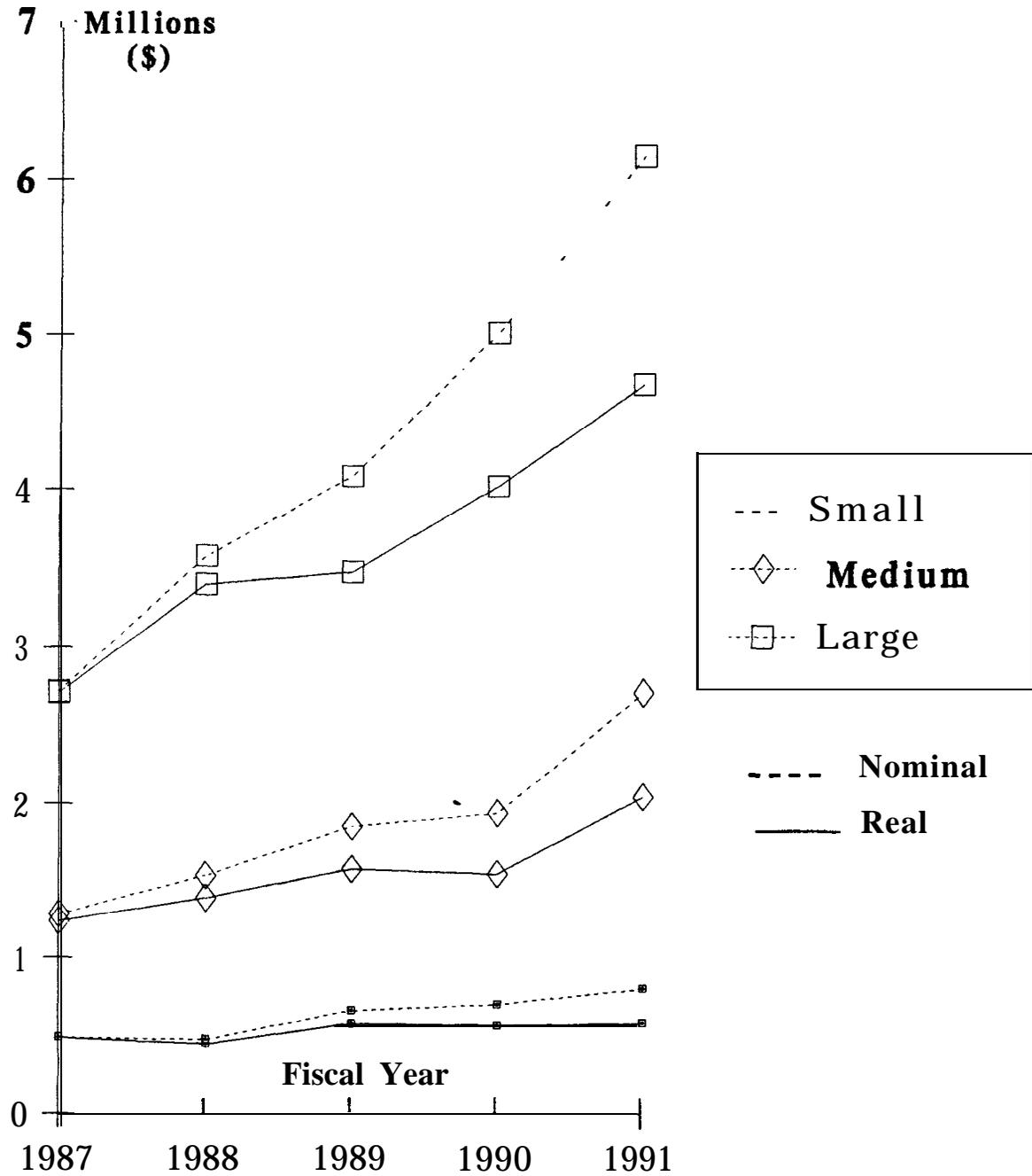
As with inpatient revenue, growth in outpatient revenue depended on the size of the hospital. Overall, inflation-adjusted outpatient revenue increased 44 percent for all grantees from 1987 to 1991. However, it increased just 17 percent for the smallest grantees, 66 percent for the medium-sized grantees, and 72 percent for the largest ones (see Figure VI.4).

It appears that although the grantees' outpatient revenue increased, this increase reflected an expansion in outpatient services nationwide among rural hospitals. Outpatient revenue for the smallest grantees, however, grew at a slower rate than that of larger grantees and rural hospitals nationwide, actually staying constant in the period after grant award, which suggests that the grants were not the impetus for revenue growth.

3. Trends in Operating Margins

Although many grant projects were aimed at increasing hospital revenues, others were designed to cut hospital costs--for example, by having a consortium negotiate volume discounts for *locum tenens* services instead of having each hospital negotiate separately. Operating margins reflect enhancements in operating efficiency as well as revenue.

FIGURE VI.4
MEDIAN OUTPATIENT REVENUES BY HOSPITAL SIZE



Note: Real revenues are expressed in constant 1987 dollars using the Personal Consumption Expenditures Price Index for Medical Care to deflate figures.

Source: Grantee Background Information Report.

Overall, grantees' operating margins improved after the grants were awarded in 1989. Hospitals lost less money on operations after they received the grants than they had in the two previous years. (See Table VI.1). This improvement in operating margins is not as strong as the improvement in operating margins for all U.S. rural hospitals of between 25 and 99 beds, although differences in the subgroup definitions may be a factor--larger hospitals have higher operating margins than smaller ones, and the national data excludes hospitals with fewer than 25 beds--those with the lowest operating margins.

The smallest grantees had much lower operating margins than the larger grantees, indicating that they lost more money on patient services. The largest hospitals were just about breaking even on their patient operations in 3 of the 4 years since 1988, while the **medium-**sized hospitals lost between 1.7 and 3.2 percent and the smallest lost between 6.1 and 14.7 percent on operations during the same period. Only the medium-sized grantees' operating margins improved since 1989; the smallest and largest grantees' operating margins were approximately the same in 1991 as they were in 1989.

In summary, grantees' operating margins changed very little from 1987 to 1991 but showed a slight improvement after grants were awarded in 1989. However, the operating margins of all U.S. rural hospitals improved during the 1988 to 1990 period, suggesting that the very slight improvement in operating margins among grantees was part of a larger, national trend rather than a result of the grants. The smallest grantees had much lower operating margins than their larger counterparts, indicating that they were losing more money on operations. As expected, the grant program did not alleviate their financial distress in the short run.

TABLE VI.1
TRENDS IN HOSPITAL OPERATING MARGINS

Operating Margin ^a (Median)	1987	1988	1989	1990	1991
All Rural Hospitals, 25-99 Beds, Nationwide	-.03	-.23	.14	.84	NA
All Grantees	-3.51	-2.83	-4.56	-2.76	-2.40
Small grantees	-12.63	-14.65	-11.84	-6.08	-11.15
Medium-sized grantees	-2.63	-2.61	-3.20	-2.28	-1.74
Large grantees	-2.58	-.25	.04	-1.44	-.40

SOURCE: National statistics are from *The Sourcebook: The Comparative Performance of U.S. Hospitals*. Other operating revenues besides patients service revenues are included in the national data. See Appendix D for more details. Grantee data are from the semi-annual background reports.

^aDefined as
$$\frac{\text{Net Patient Service Revenue} - \text{Total Operating Expenses}}{\text{Net Patient Service Revenue}}$$

The grantees' current ratio fluctuated from 1987 to 1991, as did the ratio for small rural hospitals nationwide, suggesting that the grant program had no impact on this measure. The grantees' current ratio hovered just above 2--smaller than the small rural hospital norm, which hovered just above 3, and lower than the national median for all hospitals in 1990 of 2.68. Although the lower current ratio is probably due in part to differences in accounting practices (see Appendix D), the figure also indicates that the grantees do not have extra cash on hand and are relatively illiquid.

Even though the current asset to current liability ratio was low for grantees in comparison to national estimates, data collected from case-study grantees suggests that, for the most part, these hospitals have the liquidity necessary to maintain operations. The majority of case-study grantees (26 of 44) indicated that they did not have cash flow problems. Three indicated that they had cash flow problems at times, but their hospital system provides cash reserves to alleviate these problems.⁴ Three other case-study grantees indicated that they had cash flow problems but could draw against a line of credit from a bank.⁵ Five sites indicated that they did not currently have a cash flow problem but had experienced one in the past or anticipated one in the future. The grantees with cash flow problems indicated that they were able to meet their payroll, but their creditors were not being paid in a timely manner.

⁴Two other system members that did not have cash flow problems also indicated that hospital system funds were available if they did incur problems.

⁵One grantee indicated that the line of credit was so expensive that the hospital was delaying payment of its bills to avoid using it.

The largest hospitals had the relatively strongest current position--the median current ratio never fell below 2 during the 5-year period, whereas the current ratio for the small and medium-sized hospitals did fall below 2, indicating a relatively weaker short-term liquidity position. Again, this pattern corresponds to information gathered from case-study grantees; none of the largest hospitals indicated that they had a cash flow problem, while eight of the medium-sized and smaller hospitals had not paid their creditors or suppliers in a timely manner because of cash flow problems.

b. Total Asset Turnover Ratio

The second measure of short-term viability is the ratio of net patient service revenue to total assets--commonly called the total asset turnover ratio. This ratio measures how much revenue a hospital is generating in relation to the amount of assets the hospital owns, which indicates how efficiently the hospital's assets are being utilized. A higher value is generally more favorable, although a high value may be generated if the capital asset value is low (which would indicate an aging plant and equipment).

Grantees' total asset turnover ratio increased during the 1987 to 1991 period, indicating that grantees' hospital revenue increased faster than their assets. This reflects an increase in the productivity of grantees' assets (see Table VI.2). This trend is similar to that for all hospitals nationwide and for all rural hospitals of 25 to 99 beds, although from 1987 to 1990, the grantees' ratio increased faster than all rural hospitals of 25 to 99 beds. However, the grantees' ratio increased less between 1990 and 1991, when the grant projects were most likely to have affected the ratio.

TABLE VI.2
TRENDS IN SHORT-TERM (CURRENT) FINANCIAL POSITIONS

Median	1987	1988	1989	1990	1991
Current Assets: Current Liabilities (Current Ratio)					
Rural Hospitals, 25-99 Beds, Nationwide ^a	3.14	3.05	3.10	3.05	NA
All Grantees	2.07	2.01	2.06	2.05	2.09
Small grantees	2.11	1.90	2.13	1.99	2.10
Medium-sized grantees	2.14	1.92	1.99	2.17	2.06
Large grantees	2.03	2.31	2.17	2.04	2.12
Total Asset Turnover Ratio					
Rural Hospitals, 25-99 Beds, Nationwide	.93	.96	.99	1.01	NA
All Grantees	.92	.99	1.03	1.08	1.09
Small grantees	.85	.90	1.05	1.07	.94
Medium-sized grantees	1.02	1.07	1.06	1.20	1.17
Large grantees	.90	.97	1.01	1.04	1.06
Ratio of Net Patient Service Revenue to Working Capital					
All Grantees	5.20	5.52	5.51	6.08	6.33
Small grantees	3.80	5.07	4.25	4.11	3.65
Medium-sized grantees	5.22	5.65	5.91	6.52	7.20
Large grantees	5.89	5.52	5.87	6.28	6.44

SOURCE: National statistics are from *The Sourcebook The Comparative Performance of U.S. Hospitals*. See Appendix D for more detail. Grantee data are from the semi-annual background reports.

NOTE: Total asset turnover ratio is net patient service revenue compared to total assets. Working capital is defined as current assets minus current liabilities.

^aThe national data includes the balance of the depreciation fund as part of current assets. Many grantees do not fund depreciation specifically and may not include it as part of current assets.

NA = Not available.

The smallest grantees started with a much lower total asset turnover ratio in 1987 than the medium-sized or largest hospitals, but the ratio increased quickly over the period. The medium-sized hospitals started with a higher ratio than the large hospitals and grew by the same amount. The relatively smaller grantees may perform better according to this measure because smaller hospitals are older and less capital-intensive facilities (see Section 5), and their assets are not as large, which drives up the ratio.

c. Ratio of Net Patient Service Revenue to Working Capital

The third measure of short-term financial viability is the ratio of net patient service revenue to working capital, where working capital is defined as current assets minus current liabilities. This measure indicates how effectively working capital was used to generate revenue, with higher values being more favorable.

The ratio of grantees' net patient service revenue to working capital improved steadily during the 5-year period, increasing by 22 percent (see Table VI.2). A significant proportion of this increase occurred during the last 2 years of the grant period. Although national data are not available to determine if this was a national trend, the data suggest that grantees increased the productivity of their working capital after receiving their grants.

The smallest grantees, however, did not enjoy the same increase in the ratio of net patient service revenue to working capital. While the medium-sized and larger grantees experienced steady growth in this ratio since 1988, the smallest hospitals experienced reductions in their ratio every year since 1988. This suggests that the smallest hospitals are having the most

difficulty using their working capital effectively, and the grant projects have not helped them improve in this area.

d. Summary

In summary, the RHCT grants had no apparent effect on grantees' short-run financial measures, compared to national trends. The grantees did increase the productivity of their working capital, suggesting that the grants may have had an impact in this area, but national comparison data for this trend do not exist. The smallest grantees, however, were clearly not helped by the grants during the 3-year grant period. Their liquidity did not improve, and they were not able to increase the effective use of their working capital to the same extent as the larger grantees.

5. Trends in Long-Run Measures of Financial Viability

Measures of long-run financial position can also reflect a hospital's financial capabilities. One key problem that rural hospitals face is rapid aging of their plant and equipment, which may project an image of poor quality to local residents. Rural hospitals may not update their facilities as often because they lack access to capital markets allowing them to fund such projects (Health Care Investment Analysts, Inc., and Deloitte & Touche, 1990).

To measure the long-term financial viability of grantees, we use three measures:

- Average age of plant
- Total liabilities to total asset ratio
- Long-term assets to total asset ratio

a. Average Age of Plant

The average age of plant is an accounting measure of the financial age of a hospital's property, plant, and equipment (capital). It is measured as the total accumulated depreciation on all property, plant, and equipment divided by total current depreciation--a ratio that reflects how much "used-up" (depreciated) capital there is relative to the stock currently used. The higher the value of this measure, the older a hospital's capital, although the measure doesn't actually gauge age in a conventional sense.

The average age of plant for all grantees increased since 1987, as it did for all U.S. hospitals over this period. Grantees replaced capital equipment at a slower pace than all U.S. rural hospitals with 25 to 99 beds. Whereas grantees' average age of plant increased by .96 over the 1987 to 1990 period, the national sample increased by .74 (see Table VI.3).

The average age of plant fell for both medium-sized and large grantees from 1990 to 1991, reversing the trend of previous years. This is, in part, as a result of construction and renovation activities completed as part of the grant projects. The average age of plant for the smallest grantees increased by 1.24--indicating that the smallest grantees' capital is not being upgraded at the same pace. Although the grant program appears to have helped larger grantees improve the accounting age of their plant and equipment, it has not helped the smallest grantees.

b. Ratio of Total Liabilities to Total Assets

The ratio of total liabilities to total assets indicates the proportion of a hospital's total assets funded by creditors and represents a hospital's financial leverage. High values indicate

TABLE VI.3
TRENDS IN LONG-RUN (OVERALL) FINANCIAL POSITION

M e d i a n	1987	1988	1989	1990	1991
Average Age of Plant^a					
Rural Hospitals, 25-99 Beds, Nationwide	8.29	8.65	8.89	9.03	NA
All Grantees	9.02	9.45	9.45	9.98	10.03
Small grantees	11.41	11.10	10.72	10.91	12.15
Medium-sized grantees	8.40	9.24	9.33	10.35	10.08
Large grantees	7.71	8.65	9.30	9.29	8.99
Ratio of Total Liabilities to Total Assets					
All Grantees	.49	.47	.44	.46	.48
Small grantees	.53	.54	.57	.56	.57
Medium-sized grantees	.49	.46	.44	.46	.46
Large grantees	.45	.44	.41	.40	.47
Ratio of Long-Term Liabilities to Total Assets					
Rural Hospitals, 25-99 Beds, Nationwide	.25	.25	.24	.24	NA
All Grantees	.24	.22	.19	.18	.19
Small grantees	.08	.08	.04	.07	.05
Medium-sized grantees	.28	.23	.21	.19	.22
Large grantees	.26	.27	.26	.22	.26

SOURCE: National statistics are from *The Sourcebook The Comparative Performance of U.S. Hospitals*. See Appendix D for more detail. Grantee data are from the semi-annual background reports.

^aDefined as total accumulated depreciation divided by total current depreciation.

NA = Not available.

the hospital is relying on outside creditors more and on its own financial resources less--a sign of financial distress.

The grantees' total liabilities to total asset ratio remained relatively constant from 1987 to 1991, indicating that grantees' overall financial leverage remained unchanged. However, when small grantees are compared to their larger counterparts, small grantees have a larger ratio--indicating that more of their assets were funded by creditors (see Table VI.3). Again, this suggests that the smallest grantees were in relatively more distressed financial situations.

c. Ratio of Long-Term Liabilities to Total Assets

The long-term liabilities to total assets ratio indicates the degree to which long-term financing is used to fund a hospital's assets. A high ratio compared to the industry average indicates that a hospital may be overextended financially; however, a low value, combined with aged capital equipment, suggests that a hospital either has not attempted to obtain or has had trouble obtaining capital financing.

The ratio of long-term liabilities to total assets fell slightly from 1987 to 1992 (from .24 to .19) at a time when the national ratio remained virtually stable (.24 for all rural hospitals between 25 and 99 beds--see Table VI.3). The decrease among grantees implies that proportionately fewer of the grantees' assets were being financed by long-term debt--an indicator that grantees were not accessing capital markets. In fact, the number of grantees reporting no long-term debt increased from 19 grantees in 1987 (out of 149 reporting) to 23 in 1990 (out of 126 reporting).

The smallest grantees had a very low long-term liabilities to total asset ratio--fluctuating between .04 and .08 during the 5-year period. The proportion of the smallest grantees reporting no long-term debt increased from 27 percent in 1987 to 35 percent in 1991, indicating that the problem worsened. This result is not surprising given the poor financial performance of the smallest grantees across all measures; hospitals that are losing money find it difficult to borrow funds, even if they feel capable of taking on such debt.

Despite evidence that grantees may have trouble borrowing long-term capital, very few of the case-study grantees were ever turned down for capital financing. Only two hospitals were denied credit. One was turned down for a \$14,000 capital lease because the firm did not enter into lease agreements with small hospitals, and the other hospital was at the maximum debt limit allowed by law and could not obtain further bank financing--although a venture capitalist loaned the hospital the money it wanted. Yet, eight of the case-study grantees had no or very little (less than \$100,000) long-term debt. These grantees usually did not have long-term debt because hospital management did not want it--the hospitals hadn't renovated, weren't planning to do so in the near future, and consciously wanted to minimize debt.⁶ Indeed, one hospital board did not want the hospital to take on any debt as a matter of policy--the hospital had to have cash on hand before it was allowed to make purchases. For many grantees the lack of access to debt financing was self-imposed; their hospital boards were financially conservative.

⁶Many public institutions require voter approval before they can attempt to sell bonds.

Only three of the case-study grantees sought bond financing for their grant projects. One was quite successful; it received a better interest rate than anticipated and as a result will retire the bonds early. However, these bonds were not backed by the hospital but by the local government,' which financed the issue with a sales tax. Other grantees that had worked with local government to obtain capital financing in the years prior to the grant indicated that they received better interest rates because of local government backing. However, two other grantees that sought bond financing for their renovation projects had difficulties. One had received county approval for financing its project, but the county withdrew support after a scandal at the hospital. The voters in the second grantee's district voted down a \$2.8 million bond request in the second year of the grant, but in the last year of the grant, voters approved a \$1.9 million bond issue. Although local government support can be helpful in grantees' acquisition of long-term financing (and is usually necessary for publicly owned institutions), it cannot always be obtained.

The grants did not have any apparent effect on grantees' long-term financial measures. Indeed, grantees' plants were not upgraded at the same rate as plants of rural hospitals nationwide, and grantees did not access long-term financing to the same degree. However, the data for medium-sized and larger grantees suggest that the grants may have had an effect. Age of plant improved for these grantees, and the ratio of their long-term liabilities to long-term assets suggests that they paid for new plant and equipment with long-term financing. The grants appear to have allowed these larger grantees to undertake construction and renovation projects earlier than they otherwise would have. In addition, we found that

grantees had not in general tried to access long-term capital markets, in many cases because the hospital's management did not want to incur long-term debt.

6. Obtaining Grant Funding

Winning an RHCT grant may give hospitals the motivation and confidence to start applying for, and receiving, grant funds from other sources. This may be a very positive effect for small rural hospitals in the long run, because it can help them overcome barriers to capital financing and provide seed money for new services.

The grant projects did not have this effect. Twenty-eight percent of the grantees received other grant funding in the 3 years before receiving their RHCT grant; these grants were for \$60,500, on average. However, in the 3-year period after receiving the RHCT grant, only 18 percent of the hospitals received other grants, averaging \$50,000 per grant. This decrease occurred despite new federal grant programs aimed at rural communities, such as the Rural Health Outreach Program.

The case studies suggest that most rural hospital administrators do not see grants as a major source of funding for new projects. One reason for the lack of enthusiasm and confidence in seeking more grants may be that in many cases the administrator who led the winning proposal effort was no longer at the hospital (see Section C). Other administrators have not even considered looking for further grant funds.

B. EFFECTS ON CONVERSION

Acute care inpatient utilization has fallen dramatically enough that some hospitals cannot realistically expect to cover operating costs with patient revenue. For some of these hospitals, closing and Converting to another type of health care institution may be the best way to improve financial viability while continuing to provide services.

Four hospitals converted into other types of health care institutions during the grant program. One became a health care clinic, and the other three became entities providing primary care clinic and nursing home services. These institutions were already offering nursing home services; the conversion just required them to terminate their acute care services.

A key question is whether these new institutions were financially stronger than the hospital that preceded them. It is difficult to answer this question because it is reasonable to expect a newly established institution to lose money in the first year(s) of operation. With that caveat, examining the financial operating results of the converted institutions can indicate whether there has been any improvement. To measure this improvement, we examined both the operating margins and the profits and losses before and after the conversion.

All four of the converted 'institution9 showed progress (see Table VI.4). All four lost money in the year before conversion, but in the year after conversion, one made a profit and the other three lost less money. Two of the institutions cut their financial losses by 40 percent or more, indicating substantial progress.

Operating margins for two of the converted institutions improved from the previous year. One institution's margins stayed about the same, and one's declined significantly. This

TABLE VI.4
TRENDS IN FINANCIAL OPERATING MEASURES
FOR CONVERTED INSTITUTIONS

Operating Margins	2 Years Before Conversion	1 Year Before Conversion	1st Year After Conversion
Institution 1: ^a Profit on Operations (Loss)	(\$269,697)	(\$290,232)	(\$173,909)
Operating Margin	-.134	-.133	-.095^b
Institution 2: Profit on Operations (Loss)	(\$482,365)	(\$789,933)	\$25,695
Operating Margin	-.151	-.261	.010
Institution 3: Profit on Operations (Loss)	(\$140,055)	(\$521,681)	(\$235,255)
Operating Margin	-.036	-.146	-902
Institution 4: Profit on Operations (Loss)	(\$60,500)	(\$61,400)	(\$57,997)
Operating Margin	-0.51	-.051	-.054

SOURCE: Grantee semi-annual background reports.

^aReporting total margin for this grantee.

^bTwo years after conversion.

institution lost less money than it did as a hospital, but the revenue the new institution generated was substantially less, so the institution lost proportionately more than it did as a hospital.

None of the four converted grantees planned to halt the new operations in the near future. Two grantees that were losing money indicated they were still in transition. One planned to utilize more available floor space in the future, and the other intended to establish a second clinic; they both expected their operations to become more profitable over time. The third grantee that opened a clinic was struggling financially and did not anticipate becoming profitable in the near future; however, it is owned by a large health care system that provides financial resources to cover the losses. The system viewed the clinic as important to its strategic position and expected to fund the clinic's long-term losses in order to maintain its visibility in the area.

In summary, the data suggest that the three grantees offering both clinic and nursing homes services will make successful transitions into financially viable health care institutions. The fourth grantee, which offers clinic services only, would have failed without the financial backing of a large health care system. These data suggest that converting to another institution did not immediately end an institution's financial problems, but it did help cut its losses. The data also suggest that the **RHCT** program can help hospitals overcome these initial losses and become more financially solid.

C. EFFECTS ON MANAGERIAL, CAPACITY

The second goal of the grant program is improving the managerial capacity of rural hospitals. To evaluate this effect, we examine three issues. First, did the management structure--the way the hospital's management is organized and interacts--change? Although changes in structure do not necessarily reflect management improvement, they may indicate whether the grants are affecting management. Second, did the grants affect management decisions regarding the hospital's future? If the grants improved managerial strength through education and communication, management decisions would probably change to reflect the new information. Third, did outcomes associated with good management, such as less staff turnover, improve over the grant period? If these outcomes improved, then it is likely that management improved.

1. Effects on Management Structure

There are many ways to organize the management of a rural hospital. In addition to traditional management, two methods have become popular in the last decade: becoming part of a multi-hospital system and being managed under contract by an outside **concern**.⁷ At the beginning of the grant program, 21 percent of the grantees were in multi-hospital systems--proportionately more than the 16 percent of rural hospitals nationally in 1987 (OTA, 1990, p. 176). Twenty-nine percent of the grantees were managed by an outside company under a

⁷In addition to different management structures, there are many different ownership structures that interact with the management structure. Because of the small sample size, we only present information on management structures.

management contract--again, proportionately more than the 19 percent of rural hospitals nationwide (OTA, 1990, p. 113).

If the grant projects affected grantees' management structure, one would expect that grantees proposing a management project' would be more likely to change than those pursuing nonmanagement goals. There does appear to be a relationship between undertaking a management grant project and contract management (Table VI.5). Grantees with a management project were more likely to sign or retain a management contract. Among the 45 grantees with management projects, 3 (6.6 percent) signed new management contracts during the 3-year period, while only 1 (2.2 percent) dropped its management contract. In contrast, only 4 percent of the grantees without management grants signed new management contracts, and 8 percent dropped their management contracts.

Another key management issue is hospital administrator or chief executive officer (CEO) turnover. Nationally, hospital CEO turnover has exceeded 16 percent in 4 of the past 5 years, and research has shown that small hospitals like the RHCT grantees are especially vulnerable (*Healthcare Executive, 1992*). Smaller, system-affiliated, or contract-managed hospitals with declining or unstable admissions are the most likely to experience high CEO turnover--characteristics that describe many of the grantees (*Modem Healthcare, 1991*). It is not surprising that since the grantees applied for the grant program, 52.9 percent had at least one

⁸Examples of management projects are market analyses, strategic planning, and improvements in management information systems.

TABLE VI.5
MANAGEMENT STRUCTURE CHANGES

	Distribution		
	All Grantees ^a (N = 170)	Those Receiving Management Grants (N = 45)	Those Receiving Nonmanagement Grants (N = 125)
Contract Management			
Always contract managed during grant period	22.9 %	24.4 %	22.4 %
Signed a management contract during grant period	4.7 %	6.6 %	4.0 %
Dropped a management contract during grant period	6.5 %	2.2 %	8.0 %
Never contract managed during grant period	65.9 %	66.7 %	65.6 %
Number of Changes in Administrator^b			
Four or more	1.8 %	0.0 %	2.4 %
Three	6.5 %	6.7 %	6.4 %
Two	12.9 %	4.4 %	16.0 %
One	31.8 %	35.6 %	30.4 %
No administrator turnover	47.1 %	53.3 %	44.8 %

SOURCE: Grantee semi-annual background reports.

^aDoes not include hospitals that closed or converted to another type of institution.

^bData were collected every 6 months. If the administrator changed more than once within 6 months, only one change was counted.

change in administrators (see Table VI.5).⁹ However, grantees with management grants were more likely to retain administrators throughout the grant period.

It is impossible to determine cause and effect from these data--that is, whether management grants improved relations between boards and administrators, reducing administrator turnover, or whether good CEOs (who are less likely to be fired) were more likely to select a management project. Nor can we determine if administrators employed by contract management firms were more likely to apply for a management grant--or whether the hospital boards with management grants were more likely to retain their contract-management firms. To untangle this issue we asked case-study grantees' board members and CEOs whether they believed the grant had affected either their management structure or their board and management relationships, and none believed the grant had affected either. This suggests that hospitals electing management projects had better board/administrator relations at the beginning, and the grant projects did not affect CEO turnover or the decision to retain a management firm.

Another component of a hospital's management structure is the hospital board and its interaction with staff responsible for day-to-day hospital management. Very few hospitals changed the structure of hospital boards during the grant period,¹⁰ and only 10 of the grantee administrators indicated that the relationship between the board and management changed

⁹This figure is not adjusted for the number of years that a grantee was in the program--some grantees completed or left the program in fewer than 3 years.

¹⁰With the exception of normal board member turnover.

during the grant period.¹¹ Two of these 10 changes in relationships were due to changes in hospital ownership, which resulted in board restructuring. The remaining eight administrators indicated that their relationships with hospital boards had changed for the better--the boards were more involved in the hospital and more outspoken and challenging to management, and communication between the board and management had improved.

Although few grantees reported any changes in the structure of their boards, the case studies showed that very few hospital boards are ineffective. Only 1 hospital board (of 44 case studies) was trying to run the hospital on a day-to-day basis, although 6 grantees indicated that this had been a problem in the past and vigilance was required to prevent its recurrence.

Morrissey, Alexander, and Ohsfeldt (1990) showed that the integration of physicians into management can increase rural hospital output. Just over half of the case-study grantees (52 percent) had a physician on their hospital board. Of those without a physician on the board, 25 percent indicated that it was illegal or a conflict of interest to include a physician, and 25 percent indicated that their medical staff was actively included in board decisions even though they were not board members. Others wanted physicians to be more involved, but in towns with only one or two physicians, getting physician commitment was difficult. The majority of grantees attempted to involve physicians in board decisions, but they could not always accomplish this. The grant program did not seem to affect physician involvement.

Two case-study grantees reported that management felt the hospital board had difficulty planning for the future and was financially very conservative. One stated that “the board just

¹¹“Out of 132 reporting.

doesn't understand that one has to spend money to make money." These complaints are consistent with the financial data presented in Section A, which showed that hospitals have incurred very little long-term debt, and data presented in Chapter III which showed that few underutilized hospitals were seriously considering conversion or consolidation. This suggests that the boards may make effective short-run policy decisions but may have difficulty planning for the future. Hospital administrators may not be planning-oriented enough to overcome the problem.

The hospitals' management structure changed during the grant period--but these changes were not due to the RHCT grants. We found that many grantees worked in ways that are consistent with good management/board relations, but in some cases, the boards and administrators were not planning-oriented enough to overcome their problems.

2. Effects on Management Decisions

Even if they do not change management structure, the grants may affect management decision making. If the grant projects improve administrator or governing board knowledge of the issues facing hospitals, management may view problems differently and make better decisions about the hospitals' futures.

Rural hospitals can implement various management strategies to improve their financial stability, but no clear evidence suggests that any one of these strategies is better than another (Mick and Morlock, 1990). However, severely underutilized hospitals should consider converting to another type of health care institution or consolidating with another hospital. As we noted in Chapter III, few hospitals started the grant program believing that decreased

demand for their services was the major problem they faced. Furthermore, 67 percent believed that their future was as full-service hospitals.¹² However, if the grant had an educational effect on the hospitals' management, a greater proportion of those with low utilization would seriously consider conversion or consolidation.

Only 8 percent of the hospitals had seriously considered conversion at the start of the grant program, and the percentage rose by less than one percentage point overall during the 3 years (see Table VI.6). The proportion of low-occupancy-rate hospitals that seriously considered conversion or had already converted increased from 9 percent to 13.5 percent during the grant period; however, at the end of the grant program, approximately the same proportion of high-occupancy-rate grantees were considering conversion. Managements' change in attitude about conversion in low-occupancy-rate hospitals was probably part of an overall trend and not the result of an assimilation of new knowledge by the low-occupancy grantees that convinced them to think about alternatives for the hospitals' future.

Only 6 of the 44 case-study grantees (14 percent) indicated that they were seriously considering conversion (4) or had converted (2). Other hospital administrators and boards identified their mission as full-service hospitals, which is what they intended to be. Three of the larger institutions considered converting portions of the hospital to other services. One grantee noted architectural difficulties with this idea--it is difficult to remove 15 beds from the center of a hospital and convert them.

¹²Twenty-five percent of the grantees were not sure about their future.

TABLE VI.6

TRENDS IN CONSIDERATION OF CONVERSION OR CONSOLIDATION

Licensed Acute Care Beds Occupancy Rate--1989	Seriously Considering Conversion or Already Converted					
	Prior to Grant	4/1/90 to 9/30/90	10/1/90 to 3/30/91	4/1/91 to 9/30/91	10/1/91 to 3/30/92	4/1/92 to 7/30/92
Below 25 Percent (n = 67)	9.0 %	10.5 %	9.7 %	11.3 %	12.5 %	13.5 %
25 to 50 Percent (n = 85)	5.9 %	1.2 %	5.1 %	1.3 %	3.1 %	3.3 %
Greater than 50 Percent (n = 18)	11.1 %	5.6 %	6.3 %	5.6 %	6.3 %	13.3 %
Total (n = 170)	8.0 %	5.4 %	7.0 %	5.8 %	7.3 %	8.7 %

Licensed Acute Care Beds Occupancy Rate--1989	Seriously Considering Consolidation or Already Consolidated					
	Prior to Grant	4/1/90 to 9/30/90	10/1/90 to 3/30/91	4/1/91 to 9/30/91	10/1/91 to 3/30/92	4/1/92 to 7/30/92
Below 25 Percent (n = 67)	4.5 %	3.0 %	3.3 %	1.7 %	1.9 %	2.0 %
25 to 50 Percent (n = 85)	5.0 %	1.2 %	2.6 %	2.6 %	1.5 %	0.0 %
Greater than 50 Percent (n = 18)	11.1 %	5.6 %	12.5 %	0.0 %	6.3 %	6.7 %
Total (n = 170)	5.5 %	2.4 %	3.9 %	2.0 %	2.2 %	1.6 %

SOURCE: Grantee semi-annual background reports

NOTE: Percentages are for all grantees reporting in period. The sample size decreases as time moves on. Sample size shown is for baseline period.

The proportion of grantees seriously considering consolidation decreased during the grant period, and only one grantee actually consolidated. Surprisingly, proportionately fewer of the low-occupancy-rate grantees considered consolidation in comparison to the **high-occupancy-rate** grantees--suggesting that stronger institutions may be more interested in consolidating because they are in a better position to be the surviving institution. However, the small number of grantees (one or two) in these categories suggests that these trends could be a spurious result.

Data from the case-study grantees suggest that a higher proportion of institutions ever consider consolidation, but a number of issues prohibit it. One hospital tried to consolidate with another local hospital before the grant award, but the U.S. Justice Department intervened, arguing it was in violation of antitrust laws. Another grantee is considering consolidation with the other hospital in the county, but thus far, there has been no agreement on issues like where the hospital will be located and who will own it. A third hospital started to consider consolidation, but local civic groups asked it to abandon the idea. A fourth grantee indicated that county supervisors are actively planning to consolidate the three county hospitals, but the grantee's administration and hospital board is not in favor of the plan. These data suggest that consolidation is too difficult and expensive to accomplish, even if a hospital has grant funding to support the effort.

One grantee indicated that it was carefully monitoring the Health Care Financing Administration's Essential Access Community Hospital and Primary Care Hospital demonstration, with the intent of becoming a Primary Care Hospital if the classification

doesn't become too limited. Some grantees are willing to work with other institutions, for example, in consortia (see Chapter IV), but consolidation presents many barriers that make it an unlikely choice.

Very few grantees are actively considering either conversion or consolidation, and the grants are not affecting hospitals' attitudes toward these transitions. During site visits, many new administrators said that they were hired to turn the hospital around, which they intended to do. Closing the acute care portion of the hospital was not on their agenda. A few hospitals are converting portions of their institutions and working with other institutions on joint ventures (even if they are not consolidating), but the majority do not intend to convert or consolidate.

3. Effects on Management Outcomes

Although the grants may not have affected grantees' management structure or decision making about key issues, they could have improved managerial capabilities in other ways that will be reflected in management outcomes and increased financial viability in the future.

One key issue management outcome is whether the proportion of patients leaving the area for services the local hospital provides increases or decreases. If local residents increasingly bypass their local hospital, the hospital cannot survive. However, management can decrease the proportion of residents bypassing an institution by recruiting new physicians, offering new services, and improving the community's perception of the hospital's quality.

The proportion of area residents bypassing the hospital decreased between the year before award and ‘the final year of the grant program (see Table VI.7).¹³ The proportion of hospitals reporting bypassing by more than 50 percent of residents fell from 25.3 percent in the year before the grant to 14.1 percent in the last year of the grant. This improvement is consistent with the improvement in outpatient visits described in Chapter V.

The overwhelming majority of case-study grantees indicated that they lost patients because the hospital lacked specialists or specialty services. Research has shown that more and more specialists are moving into rural areas (Kindig, Schmelzer, and Hong, 1992). Among grantee hospitals, we found that they recruited specialist physicians either to live in the area or hold clinics at the hospital (Wooldridge and Cheh, 1992). Thus, the decrease in residents bypassing the grantees is consistent with increased availability of specialists at the grantee hospitals.

A second outcome of good management is an increase in the proportion of patients with private insurance using the facility. Research has shown that private patients tend to bypass local hospitals more often--in many cases because they can afford what is perceived to be better care elsewhere (Hart, Rosenblatt, and Amundson, 1989). However, these are the patients rural hospitals wish to retain, because they are generally the most financially lucrative ones.

Among the grantees, the proportion of inpatient days paid for by private insurance decreased during the grant period, from 32.7 percent to 28.8 percent. However, this decrease

¹³This is based on self-reported data from the hospitals. In some cases, it is based on market share information provided by state agencies; in other cases, it is based on the administrator’s assessment.

TABLE VI.7
TRENDS IN MANAGEMENT OUTCOMES

Management Outcome	Prior to Award (N = 166)	At End of Grant Period (N = 142)
Residents Bypassing the Grantee		
Less than 10 percent	9.6 %	12.7 %
10-24 percent	34.9 %	38.0 %
25-49 percent	30.1 %	35.2 %
50-74 percent	22.9 %	13.4 %
75-100 percent	2.4 %	0.7 %
Percent of Admitted Patients with Private Insurance (Median)	32.7 %	28.8 %
Days in Net Accounts Receivable	69.72	69.92
Registered Nurses		
6-month quits and layoffs rate (mean percent)	13.5 %	7.3 %
Percent with no departures	22.0 %	26.0 %
Licensed Practical Nurses		
6-month quits and layoffs rate (mean percent)	8.0 %	7.9 %
Percent with no departures	53.0 %	51.0 %
Laboratory, Radiology, Medical Records, Pharmacy Personnel		
6-month quits and layoffs rate (mean percent)	8.1 %	7.8 %
Percent with no departures	53.0 %	46.0 %
Physical, Respiratory, and Occupational Therapy ^a		
6-month quits and layoffs rate (mean percent)	16.6 %	8.2 %
Percent with no departures	64.0 %	73.0 %
Nonclinical Personnel		
6-month quits and layoffs rate (mean percent)	5.6 %	6.9 %
Percent with no departures	84.0 %	77.0 %

SOURCE: Grantee semi-annual background reports.

NOTE: Only grantees who remained hospitals throughout their grant are included in sample. Not all grantees reported all data elements; sample size shown is the maximum reporting.

^aMany hospitals contract for therapy services; hence there are fewer grantees reporting this figure.

reflects a national trend. Nationwide, the proportion of Medicare patients at all small, rural hospitals increased by 2.2 percent from 1988 to 1990, reflecting the increase in the elderly population. The proportion of Medicaid patients increased 1.2 percent, reflecting the recent expansions in the Medicaid program. A large proportion of this decrease in privately insured patients reflects the growth in publicly funded ones. If the number of uninsured patients in rural areas has increased (about which we have no data), this slight drop in the proportion of privately insured patients could mean that grantee hospitals maintained their private patient base throughout the grant period.

Another indicator of management improvement is a decrease in days in net accounts receivable. Days in net accounts receivable is an indicator of how long it takes a hospital to receive payment for services rendered--the more efficiently the billing department operates, the less time a bill will remain unpaid, if all other factors remain the same.

The median number of days in net accounts receivable was unchanged from the year before award to the last year of the grant period (69.7 and 69.9, respectively). However, from 1988 to 1990, the median days in net accounts receivable for all U.S. rural hospitals with 25 to 75 beds rose 2 percent, from 74.4 to 76.0--a trend attributed to lengthening delays in payment from Medicare and Medicaid, utilization review, and increased complexity in the billing process. Grantees' lower than typical increase strongly suggests progress in this area of management.

A final outcome of good management is that staff members do not suffer from unnecessary stress and, in turn, quit their jobs. Although some staff turnover is expected, personnel turnover is costly to a hospital, and good management minimizes it.

The proportion of clinical staff that quit or were laid off during the last 6 months of the grant was significantly lower than during the first 6 months (see Table VI.7). The proportion decreased the most for registered nurses and therapists. The average registered nurse staff departure rate fell from 13.5 percent to 7.3 percent, and the average therapy staff departure rate fell from 16.6 percent to 8.2 percent. The average licensed practical nurse (LPN) departure rate and the departure rate for laboratory, radiology, medical records, and pharmacy personnel also decreased slightly, although the number of hospitals reporting that they had no departures during the 6-month period fell from 53 percent to 51 percent for LPNs and from 53 percent to 46 percent for the laboratory, radiology, medical records, and pharmacy staff. In contrast to the trends in clinical staff, the departure rate for nonclinical personnel increased from 5.6 percent to 6.9 percent.

Data from the case-study grantees indicate that very few (8 of 44) thought nonphysician staff turnover was a problem--but when the lone member of a hospital department left, it caused problems. Most of the case-study grantees indicated that skilled personnel left for personal reasons--in many instances, because a spouse found better employment elsewhere. In addition, nurse retention was a problem for some grantees when new nursing home

regulations were instituted in the first year of the grant program, increasing the number of registered nurses needed at nursing homes.¹⁴

In the last year of the grant program, even fewer of the case-study grantees had retention problems. Whereas 5 of the 21 grantees visited in the first year of the program had retention problems, only 2 of 32 interviewed in the last year had problems. Grantees indicated that the recession limited better opportunities elsewhere for staff members and their spouses, and retention had improved. In addition, directors of nursing thought changes they had made in scheduling--offering more convenient work hours (such as 8-day, 12-hour shifts)--and the success of their staff development programs contributed to the decrease in staff turnover.

In summary, the grantees improved outcomes in areas that indicate good management, reporting less patient out-migration, the same number of days in accounts receivable despite an increasing trend nationwide, and a decrease in personnel turnover (although the decline in personnel turnover is more likely a result of the economy than the grant projects).

¹⁴The new regulations were issued in response to the Omnibus Budget Reconciliation Act of 1987, P.L. 100-203, Section 4211.

VII. DISCUSSION

A cohort of 181 hospitals received Rural Health Care Transition grants in September 1989. Most of them stayed in the program for the maximum period of 3 years, introducing a variety of new services at a cost to the Medicare Trust Fund of \$20.7 million. This report has described grantees' projects and their financial and managerial performance in the years before and after they received the grants. This chapter briefly summarizes the grant program's impacts on the grantees and then discusses future policy options.

A program with broad objectives, such as the Rural Health Care Transition grants program, must be evaluated according to a range of outcomes. Following the evaluation model described in Chapter II, we assessed the program's impacts on grantees according to three outcomes:

- Were grant-funded projects planned and implemented?
- Did the grants affect access to and quality of care?
- Did the grants have any effect on hospitals' financial and managerial performance and long-term viability?

The evidence from the evaluation suggests that the majority of grantees implemented their projects, but nearly one-third failed, even after 3 years of activity, to implement some planned component. Among those implementing their projects, the majority provide services to patients who might have had to do without or travel to receive them. Most grantees are

breaking even or making money on their projects and will retain them in the future, which will improve local access to services over a longer period.

There is little evidence to support measurable changes in hospital finances or managerial capacity as a result of the grant projects, but this is not surprising given the relatively small size of the grants and the fact that services took time to implement. Grantees could have performed better if technical assistance had been available to help solve their problems and if they had not been distracted by emergencies created by physician losses.

A. FACTORS THAT LIMITED GRANT EFFECTIVENESS

Throughout the 3-year grant period, the supply of physicians in rural areas was the biggest problem facing the grantees. The majority of grantees experienced physician recruitment and retention problems from the beginning (71 percent cited recruitment and retention as a major problem at the start of the program), and physician problems continuously thwarted project progress. Projects that depended on successful physician recruitment were often delayed because grantees were unable to recruit as scheduled, resulting in longer implementation periods for physician-dependent services. Grantees that had to divert management attention from their projects to address physician retention problems also fell behind schedule with their grant projects. In some cases, after unexpected physician losses grantees abandoned either all or part of their projects and used the grants to recruit physicians instead. More than half of the grantees used grant funds to recruit physicians; however, only 22 percent intended to use grant funds for physician recruitment when they proposed their projects.

The physician recruitment projects funded by the grants did not overcome the physician shortage problem--grantees were no more effective at recruiting regular physician staff with the grants than with hospital-supported efforts. Grantees lost more regular staff physicians than they recruited during the grant period; the median grantee with a physician recruitment project failed to increase regular physician staff size. Overall, 64 physicians were recruited with grant funds, but 11 percent had stopped practicing in the grantee area by the end of the grant program--only a 3-year period. Forty-four percent of the newly recruited physicians were recruited from other rural areas, suggesting that while grantee hospitals were helped by the program, it may have been at the expense of other rural hospitals.

Although the grantees failed to increase their regular staff, they did increase courtesy physician staff by 30 percent. The increase in courtesy staff is attributable to a number of factors, including the increased use of contract physicians to cover emergency rooms and the increase in the number of hospitals offering specialty clinic services on a part-time basis.

The second pattern emerging from this evaluation is that small grantees (those with fewer than 30 licensed beds) are financially weaker than large ones, and the grant program failed as a catalyst for small grantees to overcome their problems. During the past 5 years, inpatient utilization decreased for small grantees, and outpatient utilization grew very slowly. The decline in inpatient utilization contributed to large losses on operations. Small grantees were unable to use their working capital as effectively as large grantees, and they were less likely to refurbish their buildings and equipment. These trends were unaffected by the grant

program--not surprising because the smallest grantees were also the least likely to implement their projects.

These findings suggest that changes may be needed in the RHCT grants program, or in national policies outside the program, to improve the financial strength of small rural hospitals if they are to continue to provide services.

B. POTENTIAL CHANGES TO THE RHCT PROGRAM

The RHCT grants program was designed to be flexible. Rural hospitals face a host of problems, and program flexibility allows hospitals to tailor their projects to meet their particular needs. The flexibility also allows hospitals to modify their projects when circumstances dictate the need for change. There is a cost to this flexibility, however. Inevitably, some hospitals fail to implement grant projects successfully or implement projects that do not meet their needs. The number of unsuccessful grantees could be reduced at a cost of reducing the program's flexibility.

One potential change that could improve program outcomes is limiting the types of projects funded, because some types of projects were less likely to be successful than others. Adult day care was one of the least likely services to be implemented (often because of financing difficulties) and, if implemented, one of the most likely to be abandoned after the grant period (because of low revenue). Adult day care did little for grantees' finances and did not provide a sustained service for communities. Patient services like community education programs were fairly easy to implement but were among the least likely to be retained after the grant ended, because they cost more than they produce in direct hospital revenues. A

weaker intervention would be to steer applicants away from these sorts of projects by providing them with information about previous grantees' lack of success with them. (A guide for rural hospitals will be prepared in 1994 that will describe RHCT grant project implementation successes or failures.)

Some projects might also be excluded from the program because they do not make policy sense. Grant projects that benefit individual grantees may not benefit other local health care providers, or they may not improve attainment of national policy goals. For example, physician recruitment can benefit grantees at a cost to other rural areas. A large part of grant funds was spent on recruiting physicians, particularly primary care ones, using a mix of approaches that included commercial recruiting agencies, in-house physician recruiters, and videotapes produced to attract physicians. Half the grantees spent some grant funds on recruiting. If we assume, conservatively, that each grantee spent the average agency price of \$25,000 to recruit a generalist, the grant program paid more than \$2.25 million for physician recruiting in this first cohort of grantees. Because 55 percent of the generalists were recruited from other rural areas, rather than residency programs or relatively better-stocked urban areas, the grant program may have contributed to a net improvement in physician incomes and satisfaction, but its net effect on physician availability in rural areas was small.

Some grant projects added services that were not in short supply in the area at the time of award. For example, home health agencies were frequently added in areas where they already existed. This is not necessarily bad. Additional hospital-based services can contribute to hospital revenues and improvements in the continuity of patient care. Furthermore, case-

study grantees that added services already available locally did not believe other providers of similar services were hurt financially. However, the grant selection process could be changed to give priority to hospitals proposing services that are not available locally.

Another modification could involve a more structured grant program. This type of program might involve a two-phase grant award that required evidence of a satisfactory plan for implementing a service within a reasonable time frame before implementation was funded. The Robert Wood Johnson Rural Hospital Consortia project used this type of funding process, awarding planning grants in the first phase of the program, and implementation grants in the second phase to those that successfully completed their planning. This type of process would necessitate more monitoring of grantee performance and require more resources on the federal level to administer.

Some grantee implementation problems could have been resolved by technical assistance (with or without a grant program). For example, Rural Health Clinics were hard to implement (only one of six case-study grantees planning a Rural Health Clinic actually implemented one, although grantees that implemented them plan to keep them after the grant period). If more of these grantees had received technical assistance in resolving certification and recruiting problems, implementation might have been more successful. Grantees also needed assistance in meeting the billing requirements of their Medicare carriers or intermediaries in order to be reimbursed for newly implemented grant-funded services, and assistance with physician recruiting and retention. Case-study grantees mentioned these problems; some described how they eventually solved them after stumbling upon sources of

help. Providing this type of technical assistance would increase the program's cost at the federal level.

C. POTENTIAL CHANGES BEYOND THE **GRANT** PROGRAM

Some small hospitals' problems are not readily resolved, even with a flexible grant program. The grant program can have positive effects on a hospital and its community only if the planned service is implemented satisfactorily and used by the community. When leadership is lacking, a poor choice of project may be made, or implementation may be problematic. Some of the most severe financial problems occurred among the smallest hospitals, where attracting strong managers may be most difficult. The smallest hospitals also had the poorest project implementation rate. (It should be noted, however, that some small hospitals have good leadership and are financially secure.) The leadership problem must be resolved locally, when it is recognized, perhaps through education and training of boards and administrators. Many state hospital associations offer programs to help hospitals address these difficulties.

The grant program did not fundamentally address small rural hospitals' principal problem--difficulty in recruiting and retaining physicians. As an alternative to the grant program, the federal government could provide selective support for medical schools training generalists who are interested in practicing in areas with physician shortages. By addressing this pervasive problem at its root, the government could help rural hospitals improve their financial situations, and programs such as the **RHCT** grants program would not be necessary.

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APPENDIX A
HOSPITALS AWARDED RHCT
GRANTS IN FISCAL 1989

APPENDIX A

HOSPITALS AWARDED RHCT GRANTS IN FISCAL 1989

State	Hospital	City	Year Left Program*
Alabama	Green County Hospital	Eutaw	
	Hale County Hospital	Greensboro	
	Fayette County Hospital	Fayette	
	Bibb Medical Centef	Centreville	
Alaska	Wrangell General Hospital	Wrangell	
Arizona	Casa Grande Regional Medical Center	Casa Grande	
Arkansas	Stuttgart Memorial Hospital	Stuttgart	
	Piggott Community Hospital	Piggott	
	Twin Rivers Medical Center	Arkadelphia	
	Corning Community Hospital, Inc.	Corning	1991
	Helena Regional Medical Center	Helena	1991
	Chicot Memorial hospital	Lake Village	
	Fulton County Hospital	Salem	
California	Redbud Community Hospital	Clearlake	
	Pioneers Memorial Hospital	Brawley	
	John C. Fremont Hospital	Mariposa	
	Lakeside Community Hospital	Lakeport	
Colorado	Southeast Colorado Hospital	Springfield	
	Salida Hospital	Salida	
	Melissa Memorial Hospital	Holyoke	
	Pioneers Hospital of Rio Blanco City	Meeker	

*This indicates 1989 grantees that left the program before the end of the 3-year grant period. Hospitals with more than one grant are listed twice.

APPENDIX A (*continued*)

S t a t e	Hospital	City	Year Left Program*
Colorado, continued .	Rangely District Hospital	Rangely	1990
Florida	Calhoun General Hospital	Blountstown	1990
Georgia	Wills Memorial Hospital	Washington	
	Taylor Regional Hospital	Hawkinsville	
	Marion County Hospital, Inc.	Buena Vista	1991
Hawaii	Molokai General Hospital	Kaunakakai	1991
Idaho	Gritman Memorial Hospital	Moscow	
	Elmore Medical Center	Mountain Home	1991
	Bear Lake Memorial Hospital	Montpelier	1991
Illinois	The Julia Rackley Perry Memorial Hospital	Princeton	
	Union County Hospital District	Anna	
	Massac Memorial Hospital	Metropolis	
	La Harpe Hospital Association	La Harpe	
Indiana	Putnam County Hospital	Greencastle	1991
	Adams County Memorial Hospital	Decatur	
	Blackford County Hospital	Hartford City	
Iowa	Central Community Hospital	Elkader	
	Clarke County Hospital	Osceola	
	Mercy Hospital of Franciscan Sisters	Oelwein	
	Ringgold County Hospital	Mount Ayr	
	Skiff Medical Center	Newton	
Kansas	Salem Hospital, Inc.	Hillsboro	

*This indicates **1989** grantees that left the program before the end of the 3-year grant period. Hospitals with **more** than one grant are listed twice.

APPENDIX A (continued)

State	Hospital	City	Year Left Program*
Kansas, continued	The Saint Mary Hospital	Manhattan	1991
	Phillips County Hospital	Phillipsburg	1991
	Wamego City Hospital	Wamego	
	Baxter Memorial Hospital	Baxter Springs	1991
	Minneola Hospital District No. 2	Minneola	1991
	Arkansas City Memorial Hospital	Arkansas City	1989
	Allen County Hospital	Iola	1991
	Bob Wilson Memorial Hospital	Ulysses	
Kentucky	Our Lady of the Way Memorial	Martin	
	Franklin Simpson Memorial Hospital	Dranklin	1991
	Carroll County Memorial Hospital	Carrollton	
	Breckinridge Memorial Hospital, Inc.	Hardinsburg	1989
Louisiana	St. Luke General Hospital	Arnaudville	1990
	West Carroll Memorial Hospital, Inc.	Oak Grove	
	St. Helena Parish Hospital	Greensburg	
	Riverland Medical Center	Ferriday	1991
Maine	Blue Hill Memorial Hospital	Blue Hill	
Maryland	Garrett County Memorial Hospital	Oakland	
Michigan	Paul Oliver Memorial Hospital	Frankfort	
	Mercy Hospital, Grayling	Grayling	
	Charlevoix Area Hospital	Charlevoix	
	Mackinac Straits Hospital	St. Ignance	

*This indicates 1989 grantees that left the program before the end of the 3-year grant period. Hospitals with more than one grant are listed twice.

APPENDIX A (continued)

S t a t e	Hospital	City	Year Left Program*
Minnesota	St. Mary's Hospital and Home	Winsted	1991
	St. Elizabeth Hospital and Nursing Home	Wabasha	
	Northfield Hospital	Northfield	
	Warren Community Hospital	Warren	
	Cook County North Shore Hospital	Grand Marais	
	Kittson Memorial Hospital	Hallock	
	Community Memorial Hospital	Winona	1991
	Caledonia Health Care Center	Caledonia	1991
	Karlstad Memorial Hospital	Karlstad	
Mississippi	Webster General Hospital	Eupora	1991
	Noxubee General Hospital	Macon	
	Methodist Hospital of Middle Mississippi, Inc.	Lexington	
	Leake County Memorial Hospital	Carthage	
Missouri	Perry County Memorial Hospital	Perryville	
	Moberly Regional Medical Center	Moberly	
	Citizens Memorial Hospital	Bolivar	
	Hermann Area District Hospital	Hermann	
Montana	Teton Medical Center	Choteau	
	St. Peter's Community Hospital	Helena	
	Mountainview Memorial and Nursing Home	White Sulphur	
	Broadwater Health Center	Townsend	

*This indicates 1989 grantees that left the program before the end of the 3-year grant period. Hospitals with more than one grant are listed twice.

APPENDIX A (continued)

S t a t e	Hospital	City	Year Left Program*
Nebraska	Boone County Community Hospital	Albion	1990
	Boone County Community Hospital	Albion	
	Beatrice Community Hospital and Health	Beatrice	
	Thayer County Memorial Hospital	Hebron	
	Jennie M. Melham Memorial Medical Center	Broken Bow	1991
	Great Plains Regional Medical Center	North Platte	
Nevada	Elko General Hospital	Elko	1990
	Churchill Regional Medical Center	Fallon	1990
	Mount Grant General Hospital	Hawthorne	1990
	Nye Regional Medical Center	Tonopah	1990
New Hampshire	Cottage Hospital	Woodsville	
New Mexico	Presbyterian Family Health Care	Belen	
	Socorro General Hospital	socorro	
New York	Tri-County Memorial Hospital	Gowanda	
	Lewis County General Hospital	Lowville	
	Cuba Memorial Hospital	Cuba	
	Jones Memorial Hospital	Wellsville	
	Salamanca District Hospital	Salamanca	1990
North Carolina	Ashe Memorial Hospital, Inc.	Jefferson	
	Blowing Rock Hospital	Blowing Rock	1991
	Murphy Medical Center	Murphy	

*This indicates 1989 grantees that left the program before the end of the 3-year grant period. Hospitals with more than one grant are listed twice.

APPENDIX A (*continued*)

State	Hospital	City	Year Left Program*
North Carolina, continued	Our Community Hospital	Scotland Neck	
North Dakota	Pembina County Memorial Hospital	Cavalier	
	Mercy Hospital	Williston	
	Griggs County Hospital and Nursing Home	Cooperstown	
	Community Memorial Hospital	Hettinger	
	Community Memorial Hospital	Turtle Lake	
Ohio	Pike Community Hospital	Waverly	
	Highland District Hospital	Millsboro	
Oklahoma	Okarche Memorial Hospital	Okarche	
	Stroud Municipal Hospital	Stroud	
	Lindsay Municipal Hospital	Lindsay	
	Grand Valley Hospital	Pryor	
	Atoka Memorial Hospital	Atoka	
	Community Hospital	Elk City	
	Arbuckle Memorial Hospital	Sulphur	
Oregon	Mountain View Hospital and Nursing Home	Madras	
	Mercy Medical Center	Roseburg	
	Blue Mountain Hospital	John Day	
Pennsylvania	Troy Community Hospital	Troy	
	Charles Cole Memorial Hospital	Coudersport	
Puerto Rico	Castaner General Hospital, Inc.	Castaner	
South Carolina	Union Hospital District	Union	

*This indicates 1989 grantees that left the program before the end of the 3-year grant period. Hospitals with more than one grant are listed twice.

APPENDIX A (continued)

State	Hospital	City	Year Left Program*
South Dakota	Landmann Jungman Hospital	Scotland	
	Methodist Hospital	Mitchell	1992
	Gregory Community Hospital	Gregory	
	St. Michael's Hospital	Tyndall	
	Freeman Community Hospital	Freeman	
	St. Benedict Hospital	Parkston	
	Pioneer Memorial Hospital	Viborg	
	Dakota Hospital	Vermillion	
	Baptist Hospital of Winner	Winner	
	Baptist Hospital of Winner	Winner	
	Community Hospital	Wagner	
	Community Memorial Hospital	Burke	
	Community Memorial Hospital	Burke	
Douglas County Memorial Hospital	Armour		
Tennessee	LaFollette Community Hospital	LaFollette	
	Methodist Hospital of Somerville, Inc.	Somerville	
	Claiborne County Hospital	Tazewell	
Texas	Nocona General Hospital	Nocona	
	Memorial Hospital El Campo	El Campo	
	Palo Pinto General Hospital	Mineral Wells	
	Shepperd Memorial Hospital	Bumet	
	Wilson Memorial Hospital	Floresville	1990
	Smithville Hospital Authority	Smithville	1991
	Kimble Hospital	Junction	

*This indicates 1989 grantees that left the program before the end of the 3-year grant period. Hospitals with more than one grant are listed twice.

APPENDIX A (continued)

State	Hospital	City	Year Left Program*
Texas, continued	Crosbyton Clinic Hospital	Crosbyton	
	Columbus Community Hospital	Columbus	
	Hill Country Memorial Hospital	Fredericksburg	1991
	Edgar B. Davis Memorial Hospital	Luling	
	Fisher County Hospital	Rotan	
	Hansford County Hospital District	Spearman	
	Goodall-Witcher Hospital Foundation	Clifton	1991
Utah	Tooele Valley Regional Medical Center	Tooele	
Vermont	North Country Hospital	Newport	
	Northwestern Medical Center	St. Albans	
	Gifford Memorial Hospital	Randolph	
	Copley Hospital, Inc.	Morrisville	
Virginia	Community Memorial Healthcenter	South Hill	
	Lee County Community Hospital	Pennington Gap	
Washington	Samaritan Hospital	Moses Lake	1991
	Skyline Hospital	White Salmon	
	Odessa Memorial Hospital	Odessa	1991
West Virginia	Pochontas Memorial Hospital	Marlinton	
	Preston Memorial Hospital	Kingwood	1991
	Sistersville General Hospital	Sistersville	
	Stonewall Jackson Memorial Hospital	Weston	

*This indicates 1989 grantees that left the program before the end of the 3-year grant period. Hospitals with more than one grant are listed twice.

APPENDIX A (*continued*)

State	Hospital	City	Year Left Program*
Wisconsin	St. Mary's Kewaunee Area Memorial Hospital	Kewaunee	
	St. Mary's Hospital	Sparta	
	Southwest Health Center, Inc.	Platteville	
	Adams County Memorial Health, Inc.	Friendship	
	St. Joseph's Hospital	Arcadia	
	Memorial Hospital of Boscobel	Boscobel	
	Memorial Hospital of Iowa County, Inc.	Dodgeville	
	Northwoods Hospital Association, Inc.	Phelps	
Wyoming	Memorial Hospital of Sweetwater County	Rock Springs	
	Memorial Hospital of Carbon County	Rawlins	

*This indicates 1989 grantees that left the program before the end of the **3-year** grant period. Hospitals with more than one grant are listed twice.

APPENDIX B
CASE-STUDY GRANTEES

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TABLE B.1
NUMBER OF CASE-STUDY GRANTEES VISITED AND
SUBSEQUENTLY CONTACTED BY TELEPHONE,
1990, 1991, AND 1992

Year of First Visit	Number Visited	Number Revisited in:		Number Contacted by Telephone in:	
		1991	1992	1991	1992
1990	22 ^a	6 ^d	1	15	15
1991	11 ^b	--	0	--	6
1992	11 ^c	--	--	--	--
Total	44	6	1	15	21

^a19 individual grantees and 1 consortium with 3 members. **Two** grantees were no longer hospitals when visited.

^b9 individual grantees and 1 consortium with 2 members.

^c9 individual grantees and 1 consortium with 2 members.

^d**Includes** one consortium of which one member had terminated the grant by the date of the visit.

TABLE B.2
CHARACTERISTICS OF CASE-STUDY GRANTEES AND ALL GRANTEES

	All Grantees		Case-Study Grantees	
	Number	Percent	Number	Percent
Distribution by Region				
Northeast	14	8 %	3	7 %
Midwest	67	38 %	20	45 %
South	60	34 %	14	32 %
west	34	19 %	7	16 %
Distribution by Hospital Ownership				
Privately owned	86	49 %	22	51 %
Publicly owned	89	51 %	21	49 %
Distribution by Type of Management				
Independent hospital, no management contract	102	58 %	26	61 %
Independent hospital, management contract	33	19 %	3	7 %
Multihospital system	40	23 %	14	33 %
Distribution by Number of Licensed Acute Care Beds in 1989				
Small (fewer than 31)	57	33 %	10	23 %
Medium-sized (31 to 60)	70	40 %	18	41 %
Large (more than 60)	48	27 %	16	36 %
Distance to Nearest Hospital (Median Time in Minutes)				
Acute	40		30	
Tertiary	67.5		70	
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Total Number of Grantees	175		44	

SOURCE : First semi-annual grantee background report.

APPENDIX C

DATA APPENDIX FOR CHAPTER V

APPENDIX C

DATA APPENDIX FOR CHAPTER V

The data presented in Chapter V are for all grantees that remained hospitals throughout the grant period (i.e., did not convert to another institution or close) and submitted either the baseline or the grant conclusion form. However, grantees reporting at the end of the period may have characteristics differing from those reporting at the beginning, and the results reported in Chapter V may be biased because of differences in reporting. In fact, such bias was found for outpatient visit data. Because of this bias, Figure V.2 presents a matched sample of grantees reporting 1987 and 1991 outpatient visits ¹For the remaining variables presented in Chapter V, no reporting bias was detected that would alter the conclusions presented. The following tables show the results for the matched sample of grantees that remained hospitals throughout the **3-year** period.

¹Many of the smaller grantees did not record hospital outpatient visits at the beginning of the grant period but did so in later years. The increase in the number of small hospitals reporting decreased the average number of outpatient visits and made the upward trend look less steep than it was.

TABLE C.1
NEW OR ENHANCED SERVICES SINCE 1989
FOR A MATCHED SAMPLE OF GRANTEES

	Hospitals Offering Service at Start of Award (N = 141)	Hospitals Offering Service at End of Award (N = 141)	Hospitals Expanding Service during Grant Period (N = 141)
Inpatient Services			
Swing beds	65.5 %	65.5 %	3.9 %
Skilled nursing beds	44.2 %	41.4 %	4.5 %
Intensive care units	61.6 %	56.1 %	1.3 %
Cardiac care units	48.6 %	40.7 %	1.9 %
Diagnostic Services			
Computerized axial tomography scanner	54.3 %	63.1 %	7.7 %
Magnetic resonance imaging	5.1 %	17.9 %	0.0 %
Ultrasound	87.7 %	86.5 %	13.6 %
Mammography	82.6 %	78.7 %	9.0 %
Therapeutic Services			
Physical therapy	81.9 %	82.0 %	16.7 %
Occupational therapy	29.7 %	29.5 %	4.5 %
Speech therapy	47.8 %	46.8 %	3.9 %
Respiratory therapy	74.6 %	73.9 %	5.8 %
Home health	43.5 %	48.2 %	10.3 %
Cardiac rehabilitation	18.1 %	20.9 %	1.0 %
Audiology	17.4 %	13.0 %	0.0 %
Chemical dependency rehabilitation	5.8 %	5.1 %	1.0 %

SOURCE: Grantee semi-annual background report.

NOTE: Not all grantees reported all variables. Sample size shown is the maximum number reporting.

TABLE C.2

CHANGES IN THE EFFECTIVE SUPPLY OF PHYSICIANS
FOR A MATCHED SAMPLE OF GRANTEES

	At Award (N = 143)	At End of Grant Period (N = 143)
Average Number of Days to Schedule an Appointment with a Primary Care Physician	4.7	6.3
Proportion of Communities Where Primary Care Providers Accept New Patients	95.0 %	96.0 %
Proportion of Communities Where at Least One Physician Was Prohibited from Practicing for Medicare	3.4 %	2.0 %

SOURCE: Grantee semi-annual background report.

NOTE: Not all grantees reported all variables. Sample size shown is the maximum number reporting.

TABLE C.3

PERCEIVED CHANGES IN PHYSICIAN SUPPLY
FOR A MATCHED SAMPLE OF GRANTEES

	At Award (N = 145)	At End of Grant Period (N = 145)
Percentage of Hospitals Reporting Physician Staff Shortages	83.0 %	73.0 %
Percentage of Hospitals Where Physicians Typically Work More than 55 Hours/Week	58.0 %	56.0 %

SOURCE: Grantee semi-annual background report.

NOTE: Not all grantees reported all variables. Sample size shown is the maximum number reporting.

TABLE C.4

**HOSPITAL STAFFING, NURSES, AND ALLIED HEALTH PROFESSIONALS
FOR A MATCHED SAMPLE OF GRANTEES**

	Average Number of Full-Time Equivalent Staff	
	At Award (N = 143)	At End of Grant Period (N = 143)
Registered Nurses	24.9	30.1
Licensed Practical Nurses	11.9	11.7
Physician Assistants	.1	.2
Physical Therapy (Licensed or Certified Staff)	1.1	1.4
Respiratory Therapy (Licensed or Certified Staff)	2.1	2.2
Occupational Therapy (Licensed or Certified Staff)	.2	.3
Radiology (Licensed or Certified Staff)	3.6	4.1
Laboratory (Licensed or Certified Staff)	4.7	5.3

SOURCE: Grantee semi-annual background report.

NOTE: Not all grantees reported all variables. Sample size shown is the maximum number reporting.

TABLE C.5

PERCEIVED CHANGES IN HEALTH CARE PERSONNEL SUPPLY
FOR A MATCHED SAMPLE OF GRANTEES

	At Award (N = 145)	At End of G-rant Period (N = 145)
Percentage Reporting Nursing Shortages	71.0 %	56.0 %
Percentage Where Nurses Typically Work More than 40 Hours/Week	29.8 %	22.0 %
Percentage with Perceived Allied Health Professional Shortages	71.0 %	58.0 %
Percentage Where Licensed Support Staff Typically Work More than 40 Hours/Week	19.0 %	18.0 %

SOURCE: Grantee semi-annual background report.

NOTE: Not all grantees reported all variables. Sample size shown is the maximum number reporting.

TABLE C.6

AVAILABILITY OF POSTHOSPITAL HEALTH CARE SERVICES
FOR A MATCHED SAMPLE OF GRANTEES

	At Award (N = 144)	At End of Grant Period (N = 144)
Discharge to Nursing Homes Typically Difficult Because of Nonavailability of Beds	27 %	30 %
Discharge to Medicare-Certified Facilities Typically Difficult	32 %	24 %
Arranging Skilled Home Health Care Services Postdischarge Typically Difficult	16 %	15 %
Arranging Personal Care or Homemaker Services Postdischarge Typically Difficult	38 %	30 %

SOURCE: Grantee semi-annual background report.

NOTE: Not all grantees reported all variables. Sample size shown is the maximum number reporting.

TABLE C.7

ACCESS TO LOCAL EMERGENCY ROOM
FOR A MATCHED SAMPLE OF GRANTEES

	At Award (N = 144)	At End of Grant Period (N = 144)
Percent of Hospitals with 24-Hour, 7-Day Emergency Room	97 %	99 %
Percent of Hospitals with Continuous Physician Coverage of Emergency Room	44 %	57 %
Average Response Time for Physicians when Emergency Room Is Not Staffed	16.7 minutes	15.7 minutes
Average Number of Emergency Room Visits ^a	4,927	5,368
Average Number of Emergency Room Visits Resulting in Hospital Admission ^{b,c}	681	731

SOURCE: Grantee semi-annual background report.

NOTE: Not all grantees reported all variables. Sample size shown is the maximum number reporting.

^aOnly grantees reporting all 3 years are included.

^bOnly 103 grantees reporting at baseline; 119 at conclusion.

^cIncludes admission to other hospitals.

TABLE C.8

**STRUCTURAL MEASURES OF QUALITY--BUILDING AND EQUIPMENT
FOR A MATCHED SAMPLE OF GRANTEES**

	At Award	At End of Grant Period
Number of Years Since Last Major Renovation		
30 years or more	4.0 %	3.0 %
30 to 29 years	13.5 %	9.0 %
10 to 19 years	31.0 %	19.5 %
Less than 10 years ^a	51.6 %	68.4 %
Average Age of:		
Main radiology unit	10.6	9.0
Chemistry machine analyzer	3.8	3.7
Blood gas machine	4.7	4.2
Percent with Decreased Lab Work Time	NA	52.0 %

SOURCE: Grantee semi-annual background report.

^aIncludes all grantees in the process of renovating.

NA = Not applicable.

TABLE C.9
 MEDIAN INPATIENT DAYS FOR MATCHED SAMPLE

	1987	1988	1989	1990	1993
All Grantees	6,197	6,034	5,741	5,299	4,908

SOURCE: Grantee semi-annual background report.

APPENDIX D
DATA APPENDIX FOR CHAPTER VI

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APPENDIX D

DATA APPENDIX FOR CHAPTER VI

Grantee Financial Data

Grantees submitted the financial data used in this report with their first, fourth, fifth, and final semi-annual monitoring reports. They were asked to report audited financial data for hospital operations and assets, but not all grantees could do so for two reasons: (1) the hospital was not audited on a regular basis; or (2) the hospital was part of a system, and only the system was audited, not the individual hospital.

Because of differences in their bookkeeping systems, some grantees found it impossible to report all the financial data elements we requested. In some cases, the hospitals could not separate individual hospital assets and liabilities from system assets and liabilities. In other cases, hospitals could not separate hospital patient revenue from nursing home revenue. Some of the smaller institutions could not separate inpatient from outpatient revenues. Grantees' inabilities to report financial measures accurately and completely make the data prone to measurement error. If these measurement errors result in large differences between the reported and the actual value, statistics that are sensitive to such error may produce misleading results. To mitigate this measurement error, we have reported hospital median values. If we assume that grantees reported data consistently from period to period, the trends presented in this report should not be affected by reporting errors.

Comparison Data

The national data used for comparison purposes are from The *Comparative Performance of U.S. Hospitals: The Sourcebook, 1991 Edition*, produced jointly by Health Care Investment Analysts, Inc., and Deloitte & Touche. Their data sample includes 4,817 hospitals, or virtually every general acute care hospital with more than 25 beds. The primary sources of data are hospitals' Medicare cost reports.

These national comparison data are not strictly comparable to our grantees' for the following reasons:

- The national data exclude hospitals with fewer than 25 beds.
- The national data include both federal and proprietary hospitals, which are ineligible for the grant program.
- In measuring operating profit margin, the national data use total operating revenue in calculating the numerator--which is the sum of net patient revenues and other operating revenues. The grantee data include only net patient revenues, not other operating revenues. This makes grantees' operating margins lower in comparison.
- In measuring the current ratio, the national data include the balance of the depreciation fund as part of current assets--which the grantees are unlikely to include as part of their measure of current assets. This makes grantees' current ratio lower in comparison.

Although these differences make it inappropriate to compare some aspects of national and grantee data, the national data are still useful for the comparison of trends.

Revenue Deflator

During the course of the grant program, the economy experienced only modest inflation; however, medical care prices rose substantially. This makes it important to deflate the revenues presented in this analysis.¹ There are a number of price deflators that could be used for this purpose, but we chose the Medical Care Index for Personal Consumption Expenditures from the Survey *of Current Business, July 1992*, because the grantees reported gross inpatient and outpatient revenues. Gross revenues are calculated on the basis of hospital charges. Because this index is based upon consumer expenditures, which are directly related to hospital charges, it is appropriate for this analysis.

Reporting Bias

Although efforts were made to ensure that all grantees reported all years of data, it was impossible to obtain full compliance. This was a particular problem in the last year of the analysis period, because a maximum of 126 grantees reported financial data for that analysis year (1991), whereas in other analysis years the number of responses varied between 142 and 154. The low response in the final year is primarily due to two factors: first, the grantees may not have received fiscal year data from their own accountants;² and second, the grantees did not submit their reports in time to be included in this report. If grantees that did not report

¹The ratios presented use reported data unadjusted for inflation. We did this for two reasons. First, the national data are reported this way. Second, if the same inflation rate is applicable to both the numerator and denominator, the ratio analysis will automatically cancel out inflationary effects.

²Note that we constructed analysis years to start on July 1 instead of October 1 because of this problem, but a number of grantees could not submit the data in time for this report.

their final year of data differed significantly from other grantees--for example, if grantees with poor finances did not report in the final year--then the trend data may show an improvement that is really a function of reporting bias.

To examine this issue, we recalculated 1990 financial measures using only those hospitals that reported financial data in analysis year 1991. Although the numbers differed somewhat from those presented in the report, the overall trends and our interpretation of them did not change. The following tables present data for the matched set of grantees reporting in both 1990 and 1991. We have also included other tables presenting baseline and conclusion data for the matched sample of reporting grantees.

TABLE D.1

TRENDS IN HOSPITAL OPERATING MARGINS
FOR A MATCHED SAMPLE OF GRANTEES

Operating Margin ^a (Median)	1990	1991
Rural Hospitals, 25-99 beds (nationwide)	.84	NA
All Grantees	-3.67	-2.40
Small grantees	-4.67	-11.15
Medium-sized grantees	-3.08	-1.74
Large grantees	-3.74	-.40

SOURCE: National statistics are from *The Sourcebook The Comparative Performance of U.S. Hospitals*. Other operating revenue in addition to patient service revenues are included in the national data. Grantee data are from the semi-annual background reports.

^aDefined as
$$\frac{\text{Net Patient Service Revenue} - \text{Total Operating Expenses}}{\text{Net Patient Service Revenue}}$$

TABLE D.2

TRENDS IN SHORT-TERM (CURRENT) FINANCIAL POSITIONS
FOR A MATCHED SAMPLE OF GRANTEES

Median	1990	1991
Current Assets: Current Liabilities (Current Ratio)		
Rural Hospitals, 25-99 Beds, Nationwide ^a	3.05	NA
All Grantees	1.96	2.09
Small grantees	2.05	2.10
Medium-sized grantees	1.85	2.06
Large grantees	1.90	2.12
Total Asset Turnover Ratio		
Rural Hospitals, 25-99 Beds, Nationwide	1.01	NA
All Grantees	1.04	1.09
Small grantees	1.07	.94
Medium-sized grantees	1.09	1.17
Large grantees	1.02	1.06
Ratio of Net Patient Service Revenue to Working Capital		
All Grantees	6.24	6.33
Small grantees	4.40	3.65
Medium-sized grantees	7.45	7.20
Large grantees	6.18	6.44

SOURCE: National statistics are from The *Sourcebook: The Comparative Performance of U.S. Hospitals*. Grantee data are from the semi-annual background reports.

NOTE: Total asset turnover ratio is net patient service revenue compared to total assets. Working capital is defined as current assets minus current liabilities.

^aThe national data includes the balance of the depreciation fund as part of current assets. Many grantees do not fund depreciation specifically and may not include it as part of current assets.

NA = Not available.

TABLE D.3

TRENDS IN LONG-RUN (OVERALL) FINANCIAL POSITION
FOR A MATCHED SAMPLE OF GRANTEES

Median	1990	1991
Average Age of Plant?		
Rural Hospitals, 25-99 Beds, Nationwide	9.03	NA
All Grantees	10.11	10.03
Small grantees	10.94	12.15
Medium-sized grantees	10.44	10.08
Large grantees	9.7	8.99
Ratio of Total Liabilities to Total Assets		
All Grantees	.47	.48
Small grantees	.56	.57
Medium-sized grantees	.46	.46
Large grantees	.44	.47
Ratio of Long-Term Liabilities to Total Assets		
Rural Hospitals, 25-99 Beds, Nationwide	.24	NA
All Grantees	.19	.19
Small grantees	.10	.05
Medium-sized grantees	.19	.22
Large grantees	.24	.26

SOURCE: National statistics are from *The Sourcebook: The Comparative Performance of U.S. Hospitals*. Grantee data are from the semi-annual background reports.

^a**Defined** as total accumulated depreciation divided by total current depreciation.

NA = Not available.

TABLE D.4
MANAGEMENT STRUCTURE CHANGES
FOR A MATCHED SAMPLE OF 3-YEAR GRANTEES

	Distribution		
	All Grantees ^a (N = 128)	Those Receiving Management Grants (N = 33)	Those Receiving Nonmanagement Grants (N = 95)
Contract Management			
Always contract managed during grant period	19.5 %	21.2 %	19.0 %
Signed a management contract during grant period	5.5 %	6.1 %	5.3 %
Dropped a management contract during grant period	6.2 %	0.0 %	8.4 %
Never contract managed during grant period	68.7 %	72.7 %	67.4 %
Number of Changes in Administrator^b			
Four or more	2.4 %	0.0 %	3.2 %
Three	7.8 %	6.6 %	8.4 %
Two	14.8 %	6.6 %	17.9 %
One	29.7 %	33.3 %	28.4 %
No administrator turnover	45.3 %	54.5 %	42.1 %

SOURCE: Grantee semi-annual background reports.

“only includes hospitals that remained as hospitals for 3 years.

^b**Data** were collected every 6 months. If the administrator changed more than once within 6 months, only one change was counted.

TABLE D.5

TRENDS IN MANAGEMENT DECISIONS FOR THE 1989 RHCT GRANTEES, 1989-1992
FOR A MATCHED SAMPLE OF 3-YEAR GRANTEES

Licensed Beds Occupancy Rate--1989	Seriously Considering Conversion or Converted					
	Prior to Grant	Period 2	Period 3	Period 4	Period 5	Period 6
Below 25 Percent	6.0 %	6.0 %	2.1 %	6.3 %	8.0 %	10.0 %
25 to 50 Percent	6.7 %	0.0 %	5.1 %	0.0 %	3.3 %	3.3 %
Greater than 50 Percent	13.3 %	6.7 %	7.7 %	6.7 %	6.7 %	13.3 %
Licensed Beds Occupancy Rate--1989	Seriously Considering Consolidation, or Consolidated					
	Prior to Grant	Period 2	Period 3	Period 4	Period 5	Period 6
Below 25 Percent	4.0 %	4.0 %	0.0 %	2.1 %	2.0 %	2.0 %
25 to 50 Percent	3.5 %	1.7 %	3.4 %	1.7 %	1.7 %	0.0 %
Greater than 50 Percent	13.3 %	6.7 %	15.4 %	0.0 %	6.7 %	6.7 %

SOURCE: Grantee semi-annual background reports.

NOTE: Percentages are for all grantees reporting in period. The sample size **decreases** as time moves on.

TABLE D.6

TRENDS IN MANAGEMENT OUTCOMES
FOR A MATCHED SAMPLE OF **3-YEAR** GRANTEEES

Management Outcome	Prior to Award (N = 127)	At End of Grant Period (N = 127)
Patient Out-Migration		
Less than 10 percent	8.7 %	11.0 %
10-24 percent	34.1 %	38.6 %
25-49 percent	29.4 %	35.4 %
50-74 percent	24.6 %	15.0 %
75-100 percent	3.1 %	0.0 %
Percent of Admitted Patients with Private Insurance (Median)	32.0 %	28.0 %
Days in Net Accounts Receivable	71.54	71.08
Registered Nurses		
6-month quits and layoffs rate (mean percent)	14.9 %	6.6 %
Percent with no departures	20.0 %	26.0 %
Licensed Practical Nurses		
6-month quits and layoffs rate (mean percent)	7.6 %	7.1 %
Percent with no departures	55.0 %	54.0 %
Laboratory, Radiology, Medical Records, Pharmacy Personnel		
6-month quits and layoffs rate (mean percent)	6.8 %	7.8 %
Percent with no departures	59.0 %	48.0 %
Physical, Respiratory, and Occupational Therapy^a		
6-month quits and layoffs rate (mean percent)	17.1 %	8.5 %
Percent with no departures	61.0 %	75.0 %
Nonclinical Personnel		
6-month quits and layoffs rate (mean percent)	5.8 %	7.4 %
Percent with no departures	84.0 %	77.0 %

SOURCE: Grantee semi-annual background reports.

NOTE: Only grantees who remained hospitals for 3 years are included in sample. Not all grantees reported all data elements; sample size shown is the maximum reporting.

^a**Many** hospitals contract for therapy services; hence there are fewer grantees reporting this figure.