

Mayo Health System: A Decade of Achievement

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In 1992, the Mayo Clinic in Rochester, Minn, faced several major challenges. It was confronted with an array of efforts at both the state and the national level to change the way health care was funded and delivered. Mayo Clinic Rochester received more than half its patient volume from within a 120-mile radius, which included portions of Minnesota, Iowa, and Wisconsin. Mayo leaders anticipated insurance and delivery system changes imposed by the Health Care Financing Administration (now called the Centers for Medicare & Medicaid Services) that included limited patient access across defined geographic boundaries. Such changes might have greatly limited the ability of many patients to travel to the Mayo Clinic for their care. Competing specialty groups sought to acquire regional physician practices that had traditionally sent patients with complex conditions to the Mayo Clinic. In addition, managed care organizations were growing and thriving in the Minneapolis-St Paul area, just 80 miles away, and to a lesser extent in other nearby communities. This movement put some of Mayo's referral activity at risk.

Health care groups across the United States were dealing with similar concerns. One frequent response involved acquisition of regional physician practices, especially by hospitals, to create vertically integrated provider networks. It was hoped that such systems would increase referral flow, create a provider base for insurance contracting, provide an advantage over competitors, and improve regional or community health care delivery. All too often, however, these provider networks failed to achieve desired financial, quality, and integration goals. One report based on 2001 data assessed the loss for hospital-owned multispecialty practices at more than \$75,000 per physician.¹ Such networks also found it challenging to align and engage these new providers within a culture of integrated delivery systems.

The Mayo Clinic, however, had a model it believed would work. Mayo had experienced considerable success

through acquisition of its 2 Rochester, Minn, hospitals in 1986, which in turn allowed subsequent integration of clinic and hospital operations. This integration had achieved major efficiencies and improvement in its patient care delivery. It was hoped that this model could be duplicated with similar success in both the surrounding region and in the other Mayo Clinic locations.

Mayo Clinic's response was to create its own regional provider network. Mayo's patient-oriented vision, strong reputation for quality, considerable resources, model of integrated physician and hospital engagement, strong physician leadership base, and previous success performing outreach in many surrounding communities prepared it for this endeavor.

The Mayo Clinic sought to acquire a number of successful physician practices, and many of the community hospitals associated with these practices, and to integrate community clinic and hospital activities, preferably on a single medical campus. It sought to infuse this process with Mayo Clinic values and resources, to engage the practices in the Mayo Clinic model of continuous quality improvement, and to align these operations, to the extent possible, with those of Mayo Clinic Rochester. The ultimate goal was to create a high-quality, financially self-sufficient provider network with unencumbered patient access to the Mayo Clinic for complex specialty care.

The initial vision and structure for the Mayo Health System were due in large part to the efforts of Michael B. O'Sullivan, MD, and James G. Anderson, the first paired physician and administrator leaders of the Mayo Health System. Their plans were launched with the acquisition of a 6-member medical practice in Decorah, Iowa, in early 1992. Later that year, the much larger (87 physicians) Midelfort Clinic in Eau Claire, Wis, merged with Luther Hospital to become an integrated medical center and the second member of the Mayo Health System. The Mayo Health System has since grown to its current complement of 13 wholly owned organizations employing more than 600 physicians and 11,100 allied health staff who practice in 62 communities in portions of 3 states. Each organization consists of either a stand-alone, taxable clinic or a functionally integrated hospital and clinic. Most of these organizations also have several regional satellite operations. The Mayo Health System now includes 13 clinics or combined clinic and hospital medical centers, ranging in size from 4 to 160

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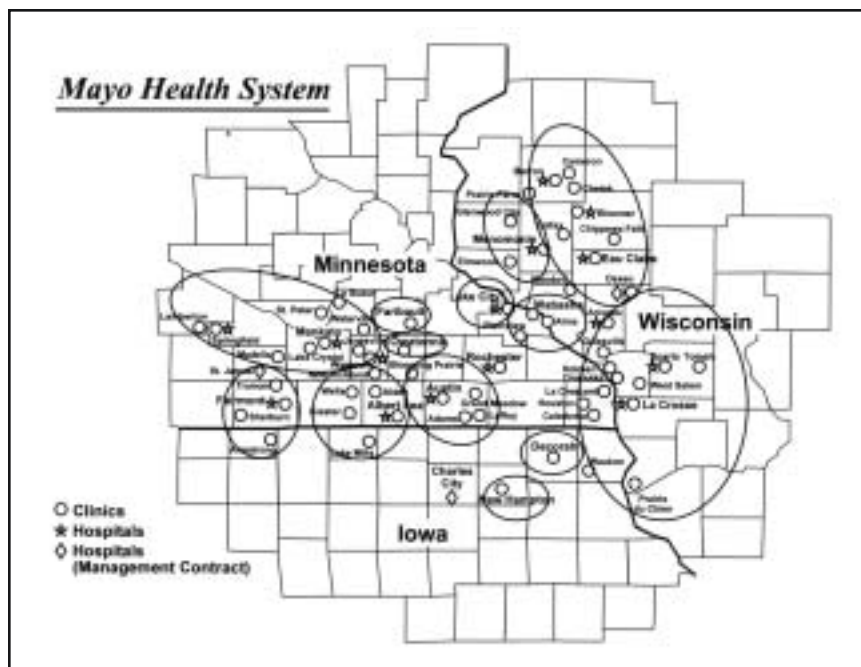


Figure 1. Current map of the Mayo Health System with its 13 service areas.

physicians and incorporating 14 owned hospitals, 8 owned nursing homes, and several other hospital and nursing home facilities under management contract (Figure 1).

Now, after a decade of development, the Mayo Health System has been deemed a success as judged by a wide spectrum of measures, including growth over a broad geographic area, recognition for use of "best practice" quality indicators, regional patient satisfaction, network financial success, regional patient referrals to Mayo Clinic Rochester, physician and administrator leadership development, and system-wide integration actions. These achievements have occurred despite challenges related to local competition, culture development, access to capital, and building of infrastructure.

It is reasonable to ask why the Mayo Health System has thrived as a vertically integrated regional health care delivery system during a time when other equally ambitious integration projects have not. Several factors have contributed to its success: (1) true physician leadership, which helps maintain patient-focused activities throughout the system; (2) acquisition of physician groups of demonstrated quality; (3) system framework that allows continued local operational control, local leadership, and sound local accountability, introduced before acquisition; (4) a consensus-driven approach to system development; (5) Upper Midwest location with smaller communities, less managed care, and prior provider consolidation; (6) true commitment to community-based health care solutions

with rebuilding of local infrastructure and recruitment of both primary care and specialty providers; (7) the Mayo Clinic's reputation for efficient, high-quality health care delivery; and (8) considerable Mayo Clinic resources available to support a regional health care delivery system.

This article describes how the Mayo Health System was created and has developed over the past decade. It highlights the benefits that have accrued to its patients, communities, and physician practices as well as the value it has brought to the Mayo Clinic. It is hoped that this experience will provide helpful insights to other groups struggling with similar challenges.

10 Mayo Health System Building Blocks

The creation of a large physician and hospital network required a multitude of planning sessions and critical decision making. These, in turn, have resulted in both outstanding achievements and a variety of "educational" setbacks. This discussion focuses on the 10 "building blocks" that we think have contributed most to the overall success of the network.

1. Vision.—The initial vision for the Mayo Health System has not changed over time. It seeks to link high-quality community care systems with the outstanding specialty care of Mayo Clinic Rochester in order "to achieve the highest standards for medical care and health improvement in the communities in which we live and work." It builds on the Mayo Clinic primary value: "The needs of the patient come first."

Key underlying principles written into each merger contract include requirements for physician leadership, local economic self-sufficiency, relative local autonomy in operational decision making, and a commitment to local quality of care.

Branding issues were resolved early for the Mayo Health System. To maintain respect for local cultures and organizations and to distinguish the regional network from the Mayo Clinic's primary specialty campus, the Mayo Health System elected to use the original or geographic title for regional clinics and medical centers. Each local name is followed by the endorsing line, "Mayo Health System" (for example, Austin Medical Center-Mayo Health System).

Provider collaboration across all Mayo sites is encouraged through a philosophy of "partners in care." Clinical departments are encouraged to plan and interact with their peer groups across the entire region. Administrative collaboration results in the sharing of scarce resources among the component entities. Patient choice of a referral center is honored, and the Mayo Clinic strives to be the worthy recipient of the referrals it receives.

2. Governance.—Mayo Health System organizations are owned solely by Mayo Foundation, except for 1 joint venture, Franciscan Skemp Healthcare in La Crosse, Wis, which has dual corporate sponsorship by Mayo Foundation and the Franciscan Sisters of Perpetual Adoration. The initial covenant between any health center, clinic, or hospital and Mayo Clinic is designed as a permanent arrangement, with a view that the merged entities will work together for long-term success and benefit to the communities they serve.

Mayo Health System's governance includes a tiered multiboard structure. Each local entity reports to the Mayo Clinic, and ultimate authority resides with Mayo Foundation, the parent organization of Mayo Clinic Rochester. Regularly scheduled meetings are held between local Mayo Health System leaders and Mayo Clinic Rochester's Board of Governors to optimize communication and planning. Continued involvement of community board members emphasizes the importance of engaging community leaders in decisions about management and services appropriate for each location.

The Mayo Clinic has reserved certain authority for oversight and determination of policy, and the same Mayo-defined reserved powers apply to all entities. These reserved powers are unchanged from the inception of the health system and include approval of strategic plans of individual practices, annual capital and operating budgets, fee schedules, new programs and services, compensation, changes in employee benefits, incurrence of debt, any transfer of assets other than in the ordinary course of business, large capital expenditures by item or aggregate pro-

gram, professional staff requests, rights of corporate members under state law, and bylaw amendments, mergers, or other fundamental changes.

The Mayo Health System was designed to include regional administrative governing boards. These boards were initially grouped geographically and were representational. For example, the 4 boards for Iowa, Minnesota, west central Wisconsin, and La Crosse had members from each of the practice sites in those regions. Mayo maintained the majority control on the governing boards by a delegated appointment system. In actuality, there has not been a vote on a controversial item that split strictly along the lines of Mayo Health System entity representatives vs Mayo Clinic representatives. The appeal to each regional board member is to consider his or her role in serving the system rather than allegiance to any particular entity or program.

Although each organization joined the Mayo Health System with full knowledge of the other entities within the system, there was no sense of linkage among the sites—in fact, some had been competitors. After several years of being asked to perform joint planning for system-wide quality initiatives, to distribute allocated capital funds transferred to the Mayo Health System by Mayo Foundation, and to periodically assist adjacent organizations with their health care delivery, the Mayo Health System sites began to see the benefits of sharing of resources within the system, economies of scale, and joint strategic planning. As trust has grown in nonrepresentational functions such as capital planning and allocation, strategic planning has led to discussion and approval (January 2003) of the concept of a single board (Figure 2). This new Mayo Health System Board has 16 members, half of whom are regional practice leaders and half who are Mayo Clinic Rochester leaders, including 2 members of the Mayo Clinic Rochester Board of Governors. The single-board concept recognizes that the Mayo Health System is a cooperative health system with geographic alliances and cooperation across service lines. The benefit derived from improvements in management and governance has augmented support for the single-board concept. This decade-long process of change exemplifies the principle that governance is not a static process but rather an evolutionary one.

3. Strategic Planning.—The Mayo Health System performed its first thorough strategic planning effort in 1995. This effort focused on defining the mission and principles for the system, a vision for linking education and research between the Mayo Clinic and the Mayo Health System, and defining the organizational options for linking the clinical practices across all entities. Since then, there have been 2 broadly based planning efforts focused on the entire Mayo Health System strategy and annual update efforts focused on a few new core goals for the system.

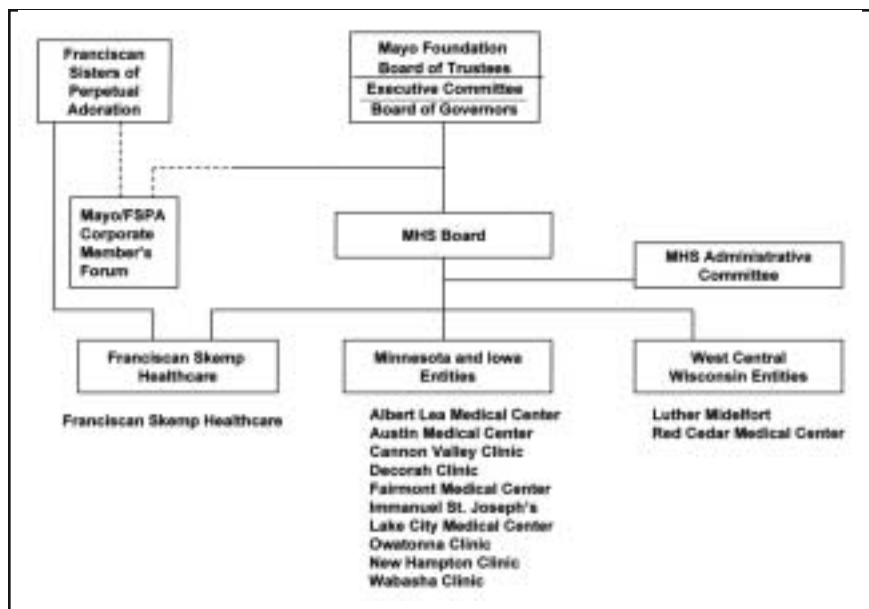


Figure 2. Current reporting structure for the Mayo Health System (MHS). FSPA = Franciscan Sisters of Perpetual Adoration.

The last comprehensive strategic planning effort for the Mayo Health System occurred in 2001. A major impetus for this exercise came from the Mayo Foundation Board of Trustees, who inquired about long-term plans for growth in the overall size of the system and in the specialties within the system. This analysis sought to align and optimize all Mayo Clinic patient care activities across the region. While seeking to accomplish this task, Mayo Health System organizations recognized that their own strategic plan goals, both individual and as part of an integrated system, needed to derive from and be consistent with those of the Mayo Clinic in Rochester. It also became clear that the previous Mayo Health System core goals meshed with those of Mayo Clinic Rochester. These core goals included growth and integration, financial success, staff and patient satisfaction, quality and service, innovation and scholarship, and the future of the health care environment.

A major initiative within the most recent strategic planning effort was a rigorous, data-driven review of past and future provider growth plans at each Mayo Health System organization. This review yielded anticipated system-wide provider growth plans of 5% to 8% per year. This growth included both acquisition of current providers within communities and incremental additions. These data allow a more robust joint planning effort for growth and patient access in all Mayo Health System locations, including Mayo Clinic Rochester. The data also have stimulated considerable debate about the implications of growth on the availability of limited strategic capital to accommodate

that growth, implications for specialists at the Mayo Clinic in Rochester, and the ability of the Mayo Health System to manage the local cultural and group dynamics created by too rapid an infusion of new young providers into a site. Most of the requested growth came from 2 of the larger organizations that are each building new facilities, and this issue has yet to be fully resolved.

4. Operations.—The main operational arm for Mayo Health System patient care issues is the Medical Directors Committee. It is composed of physician medical directors of each of the 13 primary organizations and several Mayo Clinic leaders. Key support subcommittees for this group include operations, information technology, and performance measurement (eg, quality oversight).

Each Mayo Health System organization has a paired physician and administrative liaison from the Mayo Clinic working with it and attending periodic local board and management committee meetings. These vital liaisons to the local practices serve as mentors, coaches, consultants, problem solvers, advocates, and purveyors of Mayo Clinic culture.

Some Mayo Clinic leaders engaged with the Mayo Health System also serve on the Mayo Clinic's Clinical Practice Committee, the operational oversight body for the Mayo Clinic Rochester practice. This presence allows needed practice links in terms of alignment of practice philosophy, resource and policy deployment, and issue resolution.

Major operational activities for the Mayo Health System include the use of integrated work groups to study and imple-

ment system strategic core goals. Such goals include delivering high-value, safe medical care to our patients, developing systems for “seamless” health care delivery within and among the practice sites, providing care in the most appropriate location for our patients, becoming a highly desirable employer in each of our practice communities, and optimizing peer group interactions across all our systems.

5. Quality Assurance.—The Mayo Health System was created in large part by acquiring, supporting, and integrating medical groups that were already performing reasonably well and that had an interest in delivering high-quality health care services. Those organizations clearly understood and supported the premise that their participation in the Mayo Health System meant that the Mayo Clinic would emphasize and nurture their focus on the delivery of quality health care. One result of the many efforts directed toward this quality focus is that 4 Mayo Health System organizations have won national awards for health care quality during the past 4 years.

The Medical Directors Committee recognized early on that quality oversight would be an important function within the Mayo Health System. Therefore, a performance measurement committee was appointed to serve that purpose. This committee has developed a quality “dashboard” to monitor and promote quality efforts across the Mayo Health System. This dashboard highlights actions in 5 areas: preventive services, clinical outcomes/disease management strategies (both acute and chronic), patient safety, patient service, and physician credentialing.

An early initiative within the Mayo Health System was the introduction of disease management strategies at each organization. This activity uses support and resources from a similar effort at the Mayo Clinic in Rochester. Initial actions included the implementation of 8 preventive service guidelines throughout the system and development of management strategies to improve care for patients with diabetes mellitus. Subsequently, management strategies have been developed for 2 more chronic diseases. Results now compare favorably with those of many health care organizations receiving recognition for their efforts in treating these diseases.

A major patient safety effort was initiated soon after the Institute of Medicine report *To Err is Human*² was published in 2000. A collaboration was launched that included 15 teams from the Mayo Health System and 5 teams from Mayo Clinic Rochester and other health care organizations. Each of these teams has been progressively implementing 12 identified safety initiatives, including nonpunitive reporting policy, use of oral syringes only for oral medications, removal of concentrated electrolyte solutions from patient areas, establishment of sliding-scale insulin protocols, staff safety education, and integration of standard preprinted orders. This large 2-year effort has been highly

successful, and it is gaining recognition as a model for other health care systems.

Another patient service initiative addresses “open access” for patients at most Mayo Health System sites. This change in the appointment process allows patients to decide when they would like to be seen, rather than granting an appointment time most convenient for their physician. During the past 4 years, 28 Mayo Health System locations have taken part in a Mayo Clinic collaborative effort related to open patient access.

6. Leadership Development.—Early in the development of the Mayo Health System, the need for a broad base of physician leaders within both the newly integrated medical centers and the stand-alone clinics became evident. For several larger organizations, it became necessary to transfer Mayo Clinic physician leaders and administrators to Mayo Health System entities that lacked such depth. However, the intention over time has been to develop and promote these leaders from within each Mayo Health System site.

The Mayo Health System has chosen to partner with the Executive Development Center of the Carlson School of Management at the University of Minnesota to help create leadership courses for the Mayo Health System. This joint effort has received high praise from participants. Numerous leadership courses are available to Mayo Health System staff on the Mayo Clinic Rochester campus. In addition, the Mayo Health System offers 2 several-day sessions annually at a nearby retreat center. One session is designed for senior leadership teams, and the other is directed toward development of the next generation of leaders within each Mayo Health System organization. Peer group interactions and orientation to Mayo Clinic culture are major benefits derived from these sessions.

To standardize and package leadership training content, the Mayo Health System has developed a modular approach to education. Courses are updated annually, and their content focuses on 7 leadership modules: strategic leadership, people leadership, business know-how, professional leadership, communication, interpersonal skills, and personal attributes. Although both junior and senior leadership courses use these modules, the course content for the senior leaders has a stronger strategic focus.

Enhancement of local Mayo Health System board and governance functions is another priority. To meet this system need, the Mayo Health System hosts a 2-day annual retreat in Rochester for Mayo Health System public trustees and their senior medical center leadership teams to enhance local governance and strategic capabilities. Local succession planning and annual leadership and board evaluations are requested and encouraged.

7. Administration.—A major operational advantage conveyed to member groups within the Mayo Health Sys-

tem is central administrative support, a central office with key resource personnel who can call on a wide variety of additional business support personnel from throughout Mayo Foundation. An administrator from the central office is assigned to each Mayo Health System organization, and all senior administrators meet regularly to align, optimize, and advance their business functions. The central support costs amount to about 1% of Mayo Health System's total expenses. Additional administrative resource requests are charged to the sites requesting them.

Centrally based resources used extensively by Mayo Health System organizations include communications, contracting and payor relations, disease management strategies, facilities, finance and accounting, human resources, information technology, leadership education and development, marketing, patient financial services and compliance, physician recruitment, supply expense management, and systems and procedures.

8. Finance.—An important requirement implemented at the founding of the Mayo Health System was that each participating organization must remain financially sound. Each entity must “sustain the practice” (be able to fully support its own practice), including both operating expenses and working capital needs. At the outset, Mayo recognized that this requirement for local financial accountability also necessitated local autonomy in daily operations. In recent years, the Mayo Health System has had a target annual operating margin of 5% to allow sufficient funds for current operations, replacement of needed equipment and facilities, and growth and development of the system. Organizations integrated with their local hospitals are better able to achieve this level of financial performance. Most small hospitals have been granted “Critical Access Hospital” designation by the federal government, which allows government reimbursement on a cost basis as opposed to a prospective payment basis, and this designation helps their financial performance.

In 6 of the first 10 years of operation, the Mayo Health System has either sustained itself financially or come close to doing so. The annual operating margin is now about 2.0% to 2.5%, with a net operating income in the range of \$18 million. In 2003, net medical revenue for the Mayo Health System will be about \$1 billion (Figure 3).

The original Mayo Clinic capital investment in the Mayo Health System went primarily toward market-based reimbursement for tangible assets of the acquired clinics and for limited infrastructure improvements of acquired hospitals in many of the communities.

In 1998, a Mayo Health System finance committee was established to provide central financial planning. Capital allocation from the limited annual pool of allocated funds from the Mayo Foundation has been the major task for

this council. Representatives include chief executives and financial officers from several Mayo Health System organizations as well as both Mayo Health System and Mayo Clinic Rochester leaders. Formulas have been advanced to allocate capital funds based on a combination of local accumulated depreciation and local operating performance. The capital appetite always greatly exceeds available supply, but the perceived fairness of the allocation process has allowed a better understanding of financial issues throughout Mayo Foundation and has deflected many of the concerns of Mayo Health System leaders on this issue.

9. Integration.—Clearly, a major benefit to the Mayo Clinic and to our many Mayo Health System organizations is the ability to share resources, patient referrals, and medical information across all sites. Many initiatives have been tried, with variable success. Mayo Health System organizations have worked to avoid competition with other members of the system for the same patients and resources. The diffusion of knowledge and understanding among Mayo Clinic and Mayo Health System providers has been a slow but progressive process.

To facilitate planning and integration, many joint leadership and governance sessions have occurred. Educational efforts within Mayo Clinic Rochester have helped with this effort. During the past year, joint strategic planning between the Mayo Clinic and the Mayo Health System has accelerated to promote a dialogue regarding issues such as alignment of growth and access strategies. One such issue is the persistent tension between Mayo Clinic Rochester departments and Mayo Health System organizations regarding regional access to certain specialties such as cardiac surgery and neurosurgery.

A shared electronic medical records system is a high priority for the Mayo Health System, and this goal is now being realized. The sharing of clinical notes and laboratory data between Mayo Clinic and Mayo Health System locations has been determined to be most important. To achieve these goals, the Mayo Health System is completing a “Master Patient Identification Index” and a shared “Integrated Clinical Data Repository.”

Departments and peer groups from the Mayo Clinic and the Mayo Health System are encouraged to meet periodically to share ideas, continuing medical education efforts, and other resources. Several clinical departments have excelled in this effort.

10. Strategic Value. For Patients.—Patients have experienced increased value from their local medical services since these organizations have joined the Mayo Health System. This value manifests as an increased number of local care providers, local availability and relatively seamless referral for more specialized care, a heightened

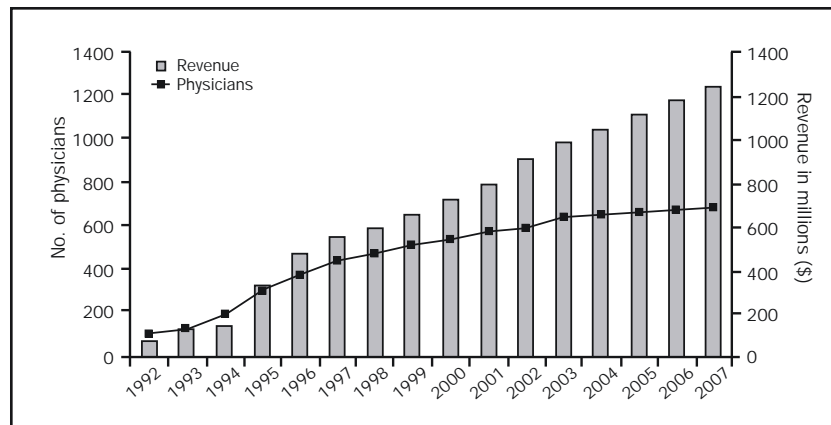


Figure 3. Actual and planned growth of the Mayo Health System in terms of physicians and net revenue.

emphasis on local medical quality and efficiency, improved local facilities, increased local health education and communication, improved ability to recruit and retain high-quality medical staff, and increased prospects within local communities for a long-term and stable health care delivery system. Patient satisfaction surveys and patient outcome studies have confirmed these benefits.

For Communities.—In many communities whose medical staffs joined the Mayo Health System, a financially stable delivery system was at risk. By integrating the local physician and hospital activities with those of the Mayo Clinic, these communities have greatly strengthened their likelihood of preserving a local health care option for their citizens in these financially distressed times for medicine. This benefit is particularly relevant for rural Midwestern communities, which are at the low end of the Medicare reimbursement spectrum.

Besides being a source of local pride and convenience for its citizens, local medical centers are a major source of jobs and local revenue. A recent study of the economic impact of the Mayo Health System in Minnesota during the year 2000 revealed that the system had a direct and indirect impact amounting to \$570 million and more than 6000 jobs. The Mayo Health System is among the largest private employers in southeastern Minnesota.

For Mayo Clinic.—The driving force to create a regional physician and hospital network was the need to ensure that regional patients could continue to access the Mayo Clinic for their specialty health care needs. However, as the number of facilities and geographic area served have grown, it has become increasingly clear that the Mayo Clinic has accepted a new challenge of building and supporting a community-based health care delivery system. The region is 250 miles in diameter, involves portions of 3 states, and contains more than 2.5 million people.

Since the health system's inception, physician-referred patients from current Mayo Health System locations to Mayo Clinic Rochester have increased from 4800 to 14,000 patients per year. The number of patients coming to the Mayo Clinic from counties within 120 miles of Rochester has also increased, from 64,000 to 96,000 patients per year. This increase in the number of regional patients has created concerns about access capacity for national and international patients and has generated considerable discussion within Mayo Clinic Rochester. The Mayo Clinic remains a national and international referral center as well as regional health care provider.

Building on principles of relative local autonomy and financial self-sufficiency, the Mayo Health System has been able to sustain itself financially in recent years, and in the future, it should be able to fund its growth and practice innovation as well. This financial achievement is in stark contrast to that experienced by most regional referral networks in the United States.

Conclusion

Overall, the Mayo Health System has grown and developed as a complement to the Mayo Clinic in most respects. Its focus on quality, referral activity, peer group interactions, strong regional community presence, and robust spirit as a professional partner of the Mayo Clinic have all contributed to its highly successful first decade. The future looks bright for continued success.

REFERENCES

1. Medical Group Management Association. *Cost Survey: 2002 Report Based on 2001 Data*. Dubuque, Ia: Kendall/Hunt Publishing Co; 2002:63.
2. Committee on Quality of Health Care in America, Institute of Medicine. In: Kohn LT, Corrigan JM, Donaldson MS, eds. *To Err is Human: Building a Safer Health System*. Washington, DC: The National Academies Press; 2000.