Cleveland Clinic: Growth Strategy 2012

What we are undertaking would in many ways transform the world of medicine.

— Dr. Delos Cosgrove, CEO

Cleveland Clinic was a multi-specialty health care system based in Cleveland, Ohio, renowned for patient care and innovation. The Clinic treated patients from all 50 states and 90 countries. In 2012, the Clinic’s health system had 42,000 employees including over 2,400 staff physicians, 9,000 nurses, and 3,000 affiliated community physicians. Total operating revenues for the health system in 2010 were $5.9 billion, with $250 million in operating income. Charity care at cost represented about $150 million (Exhibit 1).

For decades, the Clinic had been among the top U.S. hospitals with excellence in many specialties. In 2011, U.S. News and World Report ranked the Clinic fourth overall, with 14 departments ranking in the top ten in the nation. The Clinic’s Heart and Vascular Institute had ranked number one continuously for 16 straight years.

Delos M. Cosgrove, M.D., became the Clinic’s CEO in October 2004. Over the next several years, he set out to transform the Clinic’s process of care delivery and expand geographically. In addition to pioneering public reporting of outcomes across all practices, the Clinic had, in 2008 and 2009, reorganized all of its services into institutes structured around diseases or organ systems, rather than around the traditional medical and surgical departments. In addition to its main campus, the Clinic had extensive facilities in northeast Ohio as well as owned facilities or affiliates in eight states and Toronto, Canada. The Clinic offered telemedical second opinions for patients throughout the U.S. It was also managing the leading hospital in Abu Dhabi, United Arab Emirates. In 2012, Dr. Cosgrove was considering how the Clinic should choose among the many growth opportunities that were available.

History of Cleveland Clinic

Cleveland Clinic was founded in 1921 by four distinguished physicians whose aim was outstanding patient care provided through cooperation, compassion and innovation. Their vision of a multi-specialty group practice grew out of shared experiences in treating soldiers in France in World War I. As one of the nation’s first multi-specialty clinics, its 13 salaried physicians were called socialists by critics who favored private medical practices in which doctors were paid fees for services.
Over the next four decades, the Clinic added physicians in an increasing number of fields and expanded its Cleveland facilities. The role of research and teaching also expanded. In 1958, the future of the Clinic was transformed by the development of the coronary angiogram imaging procedure by Dr. F. Mason Sones. The discovery allowed coronary artery blood flow to be observed and provided the first definitive tool for diagnosing coronary disease before a heart attack or noticeable symptoms. This tool led to dramatic improvements in cardiac diagnosis and treatment, and Cleveland Clinic became its epicenter.

In 1967, the Clinic pioneered another cardiac breakthrough when Dr. Rene G. Favalaro performed the first coronary artery bypass operation. He had observed the bypass techniques used in kidney surgery and applied them to heart surgery. By 1970, one thousand of these operations had been performed at the Clinic. The explosion of interest that followed attracted both doctors and patients from around the world. By the mid-1970s, the Clinic was performing 3,000 coronary artery bypass operations per year, and worldwide, this was the most frequently performed surgical treatment.

Cardiac surgery, cardiology, and related specialties at the Clinic began co-locating in 1970. Over time, the cardiovascular practices, including the Departments of Cardiovascular Medicine, Thoracic and Cardiovascular Surgery and Cardiothoracic Anesthesiology, were brought together in a dedicated facility. A separate building on the Clinic campus opened in 1980, including outpatient clinics, specially outfitted operating and procedure rooms, imaging facilities, cardiac intensive care facilities, and dedicated inpatient rooms. Many discussions about improving patient care occurred informally since cardiologists and cardiac surgeons had offices on the same hallway.

The cardiovascular surgery and cardiology groups established the first patient outcome registry in 1972 and used it for internal research purposes. Beginning in 1986, outcome measurement was spurred nationally among cardiovascular surgeons by the federal government’s public reporting of mortality data for cardiac surgeries. Uncomfortable with the government’s metrics, the Society of Thoracic Surgeons (STS) began working on its own measures, and had compiled a national risk-adjusted database by 1989. Clinic surgeons benefited from a broader basis of comparison and additional learning about measurement and risk adjustment. Clinic results began being widely shared within the hospital in 1990.

The Clinic’s cardiac surgery registry enabled significant improvements in care. In the late 1970s, for example, the cardiovascular surgery group began contacting patients at home after coronary artery surgery and asked how they were doing. A meaningful number of patients reported that they had contracted hepatitis. The team realized that hepatitis risk stemmed from the prevalent use of blood transfusions (13 units of transfused blood for the average patient). Focus shifted to reducing blood use, with most patients getting no blood at all, and hepatitis became a rare occurrence. Using outcome information and a team approach, the Clinic pioneered a series of improvements in technique and medical devices that reduced complications and boosted success rates (Exhibit 2).

From the late 1970s through the 1980s, the Clinic’s facilities, staff, and range of specialties grew rapidly. Under the leadership of urologist and kidney transplant surgeon Dr. William S. Kiser, its international reputation also continued to grow, particularly in cardiac surgery and urology. In 1982, the Clinic undertook a $182 million construction project that became the largest privately financed project in the history of American health care.

The Clinic’s medical staff was salaried and not tenured. To help manage the rapid growth, annual professional reviews were implemented for every physician on the staff, a practice almost unheard of in medicine. The cardiovascular group at the Clinic had long had a formal review process that included patient outcomes. Dr. Floyd Loop, the Chief of Cardiac Surgery, explained that physicians
needed to compare themselves every year to their own previous performance, asking if they were better than they had been the year before.

In 1988, the Clinic invested in two stand-alone hospitals in the high growth Florida market, soon after the Mayo Clinic had opened hospitals in Jacksonville, Florida in 1986 and Scottsdale, Arizona in 1987. Florida had been the Clinic’s largest source of out-of-state referrals and the Cleveland Clinic name was well-known among Midwesterners retiring to Florida. A 150-bed hospital was built in Weston, Florida near Fort Lauderdale in partnership with Tenet, a for-profit hospital company. A wholly-owned hospital and ambulatory facilities were built in Naples, Florida.

Dr. Loop became CEO in 1989. In that year, the Clinic had grown to $626 million in revenues and almost 9,000 employees including 440 salaried physicians. Over 25,000 physicians referred patients to the Clinic, including 600 independent physicians who worked abroad and had been trained at the Clinic. Six percent of the Clinic’s patient visits came from overseas (largely from the Middle East), accounting for 10% of revenues. The Clinic provided an array of special services to accommodate families, provide translators and ease communications with foreign patients and referring doctors.

Dr. Loop drafted a new strategic plan calling for additional facilities on its main campus for an eye institute, cancer care, emergency services, operating rooms, a new international hotel, and a research institute, all of which were constructed in the ensuing decade.

The rise of managed care health plans and the widely anticipated Clinton health care reform proposals in the early 1990s created pressure for hospitals to form networks offering a full array of services. Insurers were increasingly contracting only with full service providers and were limiting patient choices of referring physicians to in-network providers. Like many hospitals nationwide, the Clinic formed a regional health system by acquiring eight hospitals in northern Ohio and assembling a network of family health clinics. By 2000, the Clinic’s revenues had grown to $2.7 billion.

In 1998, the Clinic founded the Quality Institute to enhance care quality, extend outcomes measurement, and make information available to patients and doctors. Cleveland Health Quality Choice, a group of Cleveland employers, had pioneered an effort to collect and publish comparative data on hospital quality. Clinic leaders were concerned that some of the data was not appropriately risk-adjusted to reflect the severity of patient illness and stopped providing data. Instead, the Quality Institute was created to develop and publish better measures. In 2000, the Clinic became the first hospital in the U.S. to publish its outcome measures, starting with heart surgery outcomes compared to Society of Thoracic Surgeons national averages. By 2007, the Clinic published outcome books for every department, comparing itself to the best available benchmarks.

In the late 1990s and early 2000s, public and private quality efforts began focusing on improving compliance with identified processes or evidence-based care practices. Accreditation was often tied to these measures. The Clinic examined its performance against a dashboard of process compliance measures. In 2001 and 2003, the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) awarded the Clinic the Earnest A. Codman Award for successful use of data in measuring and improving health care. Between 2006 and 2007, the Clinic moved almost all of its dashboard measures to high compliance. From that point forward, the Clinic continued adding performance measures.

Beginning in the mid-1990s, the Clinic invested heavily in information technology, purchasing the EPIC software platform and creating a unified electronic medical record with a single common database organized by patient. A series of applications were rolled out including MyPractice, in 2000, which brought together clinical and administrative applications for physician and staff use, and
MyChart, in 2002, which provided real time access to the patient record for the physician and patient. Dr.Connect, introduced in 2005, allowed referring physicians to access the records of their patients in real time. Electronic prescribing also was added in 2005 as was MyPractice Community which enabled doctors not practicing at Cleveland Clinic to purchase the system.

Dr. Cosgrove, as chairman of thoracic and cardiac surgery since 1990, had overseen the creation of an affiliate program in cardiac surgery in which surgeons at other hospitals became Cleveland Clinic staff members and participated in the Clinic’s patient registry, quality improvement and training programs, annual performance reviews, and other administrative processes. The first affiliate program arose in 1994 when the cardiac surgeon at EMH Regional Medical Center in Elyria, Ohio died, and the hospital approached the Clinic for help. In 2004, the department added its first out-of-state affiliate at a hospital not owned by Cleveland Clinic, a group of surgeons practicing at Rochester General Hospital in Rochester, New York. Managed by Dr. Cosgrove and executive administrator Linda McHugh, the number of patients at affiliates grew rapidly and patient outcomes at affiliates improved to approach the Clinic’s own levels.

The Clinic had long been one of the nation’s largest graduate medical education programs training residents and fellows. In October 2004, the Clinic opened the nation’s first new medical school in 25 years, Cleveland Clinic Lerner College of Medicine at Case Western Reserve University. Its program, a year longer than other schools, trained students in both clinical care and research. Through its endowment, the Clinic covered the entire cost of tuition for all students beginning in July of 2008. In 2012, the Clinic had 160 medical students of its own and an additional 70 medical students from other schools rotating through its system.

In October 2004, Dr. Cosgrove became CEO. He had joined the Clinic in 1975 and pioneered new techniques in heart valve surgery. Holding numerous patents for medical products that were used in surgical procedures around the world, Dr. Cosgrove characterized them as “all little things that collectively make for a better operation for the surgeon and for the patients.”

In 2006, the Clinic began restructuring and expanding its activities outside the Cleveland area. The two hospitals in Florida had run largely independently, and few Clinic physicians or staff had been involved. Facing cultural differences, poor financial results (Exhibit 3) and the inability to secure approval to perform cardiac surgery at Naples due to resistance from other providers, the Clinic restructured its Florida operations. It sold the Naples hospital and bought full ownership of the hospital in Weston in 2006. This hospital and an associated Clinic-developed outpatient practice were merged into a unified campus. By 2008, the single campus in Weston was running at a profit and at capacity; expansion was being considered.

The number of affiliated cardiac surgery practices expanded and the Clinic opened two kidney transplant affiliates outside of Ohio and a Center for Brain Health in Nevada. A Cleveland Clinic executive health and wellness service in Toronto, Canada opened in 2006. In 2007, the Clinic took over management of the Sheik Khalifa Medical City hospital in Abu Dhabi, with plans to build and manage an additional hospital, Cleveland Clinic Abu Dhabi. The new hospital was under construction in 2012 and scheduled to open in 2013.

Also in 2007, Dr. Cosgrove announced a comprehensive reorganization of the Clinic into institutes, moving away from the specialty-based department structure, beginning on the main campus. A major facilities development program was undertaken to support the new structure. Newly constructed, state-of-the-art dedicated facilities for the Clinic’s Urological and Kidney Institute and for the Heart and Vascular Institute opened in 2008.
Cleveland Clinic Health System in 2012

In 2012, the Clinic provided a broad range of care covering 120 specialties and subspecialties. The main campus in Cleveland, Ohio consisted of more than 40 buildings on 140 acres, including a hospital, a dedicated heart center building, a children’s hospital, an outpatient center, a cancer center, an eye institute, a research center and supporting labs and other facilities. In addition to the main campus, Cleveland Clinic health system included eight community hospitals in northeastern Ohio, 16 family health and ambulatory surgery centers, and 59 specialty centers located in a semicircle around central Cleveland (Exhibit 4). The health system had 4.2 million patient visits, including 167,100 admissions, 191,500 surgical cases, and more than 436,000 emergency visits. Overall, 75% of the Clinic’s patients came from northeast Ohio; 18% from elsewhere in Ohio, 6% from other states, and 1% were international.¹

Dr. Cosgrove had begun the process of rationalizing services across the network. The goal was to have multispecialty teams use system-wide resources to deliver the right care at the right place for every patient, at the right time with the right cost. Community hospitals referred patients needing quaternary care, or the most complicated and acute care, to the main campus. But integration did not just mean centralization. Obstetrics was moved exclusively to community hospitals. Psychiatry services were concentrated into one community location. Some community facilities concentrated on outpatient services and urgent care. Two facilities focused on rehabilitation. The number of trauma centers was reduced from 5 to 3 and Cleveland Clinic was a founding member of the northern Ohio trauma system that worked with emergency medical services to coordinate patient triage. Neurosurgery practices on the east side of Cuyahoga county were integrated into a common coordinated team that quickly evaluated patients locally and treated or coordinated transfer and treatment at the best suited facility. A community hospital near the main campus in central Cleveland was closed in 2011 and replaced with an outpatient center for chronic disease and intervention services for at-risk teens. Other services, such as orthopedic surgery, were being relocated (though not exclusively) from the main campus to other system hospitals. On the main campus, three vascular labs were in the process of being integrated as were three pulmonary care units.

In 2012, the vision of “One Cleveland Clinic” as a health system with consistent operational excellence among all of the hospitals was taking shape through increasing consistency and integration of care paths, a common electronic medical record, outcomes reporting, medical staff needs planning and purchasing. In September 2010, the boards of all of the hospitals met together for the first time in a retreat on how to work together to create one standard for quality, patient safety and patient experience. Each hospital would continue to have local accountability and management, but with the same administrative team roles, standardized core job descriptions for quality roles, and standardized annual quality plan reporting and measurement. Physicians at the community hospitals were 40% Clinic staff physicians and 60% physicians in private practice. Six of the community hospitals were smaller, while two larger hospitals were located on the east and west sides of greater Cleveland. Four of the hospitals were profitable, with the others registering modest losses. In total, the community hospitals had twice the admissions of the main hospital and one-third of the revenue. Patient satisfaction at all of the community hospitals remained below that of the main Clinic facility.

The Clinic’s total operating revenues were $5.9 billion in 2010, 90% from patient care. (Exhibit 1) Operating income that year had reached $250 million, down from $349 million in 2007. In addition to patient care, where there was constant pressure on reimbursement, the Clinic had significant revenue from philanthropic giving. Pledged gifts were $111 million in 2010, down from an all-time high of $176 million in 2007, and the Clinic’s long term investments were $2.3 billion in 2007, $3.4 billion in...
2010 and $3.9 billion in 2011. Total research funding in 2010 was $252 million, with federal funding representing $106 million.

Organizational Structure

All physicians who were employed by Cleveland Clinic had annual contracts with annual professional reviews for each physician carried out by the department chair and a member of the Board of Governors. More than 8,000 hours went into performance reviews each year. Salaries reflected a combination of averages at other academic medical centers, skills and productivity. Although most salaries rose over time, some physicians were not renewed, some department heads were replaced, and the salary of doctors could decrease if their productivity went down. Although the Clinic had traditionally paid less than most academic hospitals, current salaries were competitive. Many community physicians with privileges at Clinic-owned hospitals were interested in shifting to a staff position to allow easier coordination of care, and to reap the benefits of more regular schedules and greater administrative support. Among younger physicians, this interest was a national trend.

Historically, the Clinic had been organized according to departments defined by medical specialties, as were most hospitals. Each department was responsible for a wide array of patient services within the definition of its specialty. Each department had a Chair, with most reporting either to the Chief of Medicine or the Chief of Surgery.

In 2007, Dr. Cosgrove set out to reorganize all services at the main campus into multidisciplinary teams, organized from the patient perspective and defined around disease systems or organ systems. These new units were called Institutes (Exhibit 5). Dr. Cosgrove described the re-organization as tearing up the whole hospital and starting over. Medical specialties and surgical specialties would be located together, working under one institute leader and one budget. In some institutes, inpatient and outpatient care would also be co-located.

Dr. Cosgrove announced the reorganization in a town hall meeting in the spring of 2007, which almost all Clinic physicians attended either in-person or by video conference. Dr. Cosgrove explained the reaction: “No one has come to me and said, Toby that’s crazy. Not one. … I also had the buy-in of both the Chief of Surgery and Chief of Medicine, both of whose jobs would go away.”

In the spring of 2007, the first institute was established in neurosciences, bringing together neurosurgery, neurology, and psychiatry. Internally, the institute was organized around the set of diseases and conditions treated. This meant moving offices as well as upsetting the traditional organizational hierarchies. Each new institute would be led by a respected physician committed to a team culture with excellent managerial and interpersonal skills. A neuro-radiologist, Dr. Michael Modic, was appointed as the first head of the new Neurological Institute.

The Clinic also defined a number of “Special Expertise Institutes” including Laboratory and Pathology, Imaging, Quality and Patient Safety, Nursing, and Education and Research. Anesthesiology was also maintained as a Special Expertise Institute, but with sections, including cardiovascular, neurology, orthopedic, pain, pediatric, ear, nose and throat, and general anesthesiology, that would build close ties with the associated care delivery institutes.

“Support Institutes” included Patient Care Experience, Legal, Finance, Marketing and Human Resources, which provided support services to all of the care delivery institutes. The IT group was reorganized to assign IT personnel to every clinical institute and every special expertise institute. As
part of the reorganization, the Clinic added two positions that rarely existed in other hospital systems: a Chief Wellness Officer and a Chief Experience Officer.

The formation of each institute involved charging its leadership team to define what diseases and conditions the institute would care for, develop a set of shared outcome measures for which the team would be jointly accountable, and identify the skills that needed to be brought together to care for patients with the sets of conditions the team would treat. This could include consultative services, such as psychiatry, that had often been undervalued. Since institute physicians would generate revenues together, rather than as individuals, traditional differences in compensation would not necessarily persist. One physician described the new reorganization as “akin to mixing matter with anti-matter, but the process is somewhat easier.”

The institutes were given the autonomy to pursue different implementation approaches and were expected to share insights with others. For example, the Neurological Institute created a website so that others at the Clinic could learn how it was developing performance measures and decide whether or not to use a similar approach.

Within the Neurological Institute, there were 12 multidisciplinary centers addressing conditions such as epilepsy, brain tumors, sleep disorders, neurological restoration, and multiple sclerosis. The institutes developed outcome measures specific for each disease. For example, stroke measures included the validated functional ability measures of the National Institutes of Health and the Modified Rankin Scale. Institutes were beginning to introduce educators into care teams and place more attention on patient compliance. Institute leaders started looking at profits and losses from a new perspective, considering the economics of treating the whole disease rather than the revenue and costs of traditionally-defined departments or procedures.

By the end of 2007, there were nine new care delivery institutes, towards a goal of 18. Initially, new institutes were organized slowly, but the process had reached a point by early 2008 where Clinic physicians were anxious to have their new groups defined. Since the institutes were not comparable to the departments at other academic medical centers, there were some concerns about professional affiliations. Dr. Martin Harris, Chief Medical Information Officer, recalled questions such as, “Who am I now within my professional world because I exist in an entity that is not comparable to anything at UCLA or Massachusetts General? What will it mean to be a leader in an institute in terms of professional status and mobility?”

Dr. Modic explained that the most difficult part of moving to institutes was changing the culture, because institutes were “not how we used to do it.” Nor did departmental identities go away easily. Several leaders observed that medical training would need to change in order to ease the cultural transition. Dr. Modic believed that it would take about 5 years for the new culture to get established, and it would take time to move the institute model out of the main campus into the community health system.

By 2009, the institute structure covered all of the main campus. As of 2012, the network of community hospitals continued under the traditional departmental structure, though integrating them into institute care paths and quality measures was underway. Senior management was exploring how to expand the institute model to the entire system, as well as better integrating the 3,000 private practice physicians who had Cleveland Clinic affiliations into the institute structure to improve care coordination, expand wellness initiatives, better integrate medical records, and increase appropriate referrals to the Clinic’s hospitals.
Results Measurement

Upon becoming CEO, Dr. Cosgrove’s central message to employees had been *Patients First!,* which demanded relentless focus on measurable quality. Ensuring quality, in Dr. Cosgrove’s view, included improving structure, processes and outcomes. This included constant attention to patient safety, respect for the patient’s dignity, excellence in housekeeping services and facilities, and genuine concern for the patient’s emotional wellbeing and care experience.

However, Dr. Cosgrove saw medical outcomes as “the ultimate measure of quality.” Shortly after becoming CEO, he asked all departments to measure their health outcomes and prepare to report outcomes publicly in print and on the web. Every clinical team would need to consider carefully what it meant to improve the health of its patients. Since surgeons were more accustomed to outcomes measurement, the surgery groups were asked to begin public reporting in one year and the medical groups in two years. By 2007, the Clinic had published outcome booklets for every department (*Exhibits 6 and 7 give excerpts*). Outcome measurement differed in sophistication across groups, but was improving. When a department reported process metrics or the numbers of procedures or patients served, rather than patient health outcomes, Dr. Cosgrove would thank them, explain that he had committed to publicly reporting health outcomes of patients, and ask the team to work on that for the next report. In 2012, the reports were still largely based on volume and process.

The Clinic’s philosophy was that the core purpose of measuring outcomes was to enable learning and quality improvement by the teams, not obtaining referrals, marketing, or impacting ratings. The primary external audience was peer physicians. The secondary purpose, after driving improvement in outcomes, was transparency. Dr. Cosgrove explained, “We can’t be best at everything. The more you put out there, the more credibility you have. In doing so, we challenge others to do the same. We can learn from others who may be performing better than we are.”

When the Clinic reorganized into institutes, outcome books were converted to reflect the institute structure and departmental books were discontinued. Each institute was charged with figuring out what defines good care, measuring it, seeing what works and being transparent about it. Institute teams were asked to measure outcomes for patients’ conditions, rather than for procedures.

Cost measurement was also improving. At most hospitals, charges and costs were measured by procedure or by hospital day. Steve Glass, CFO, was leading a major effort to understand costs over the cycle of care for specific service lines. Legacy accounting systems at different Clinic hospitals often assigned different costs to the same activities or supplies. Glass was working to justify those differences or eliminate them. He was also working to understand the array of activities that went into care of each medical condition over its full care cycle. Understanding care cycle costs for different service lines required deep involvement of physicians with insight about the process of care, not just an analysis of charges.

Reorganization into institutes had enabled more transparency and a better understanding of costs. Clinic leaders met with the multi-disciplinary teams to share information about the costs of supplies and services. Most physicians had previously been unaware of what supplies cost. Insights about potential savings emerged. For example, one group discovered items in the surgical pack that were never used, though each surgeon had assumed they were useful to someone else. Another group discovered that it could reduce costs of surgical materials without affecting outcomes if surgeons sutured with a $5 silk suture instead of using $400 staples. When this price difference was identified, use of staplers dropped from 91% to 10%. Other groups standardized supplies to achieve significant purchasing discounts.
Cost analyses were supported by data on process standardization, patient experience, clinical outcomes, safety, and access that enabled data-driven discussions. Each team could see the same dashboard information reviewed by Clinic executives, and they were invited to ask for additional data or dashboard features.

Eventually, Glass hoped to be able to understand costs for the same service line as delivered by physician A compared to physician B, and at facility X compared to facility Y. He was also working towards a common bill structure at different Clinic facilities so that prices at each facility reflected the actual costs for the care provided. Glass was also moving toward value-based pricing, setting lower prices when services were not differentiated from community hospitals and premium prices where the Clinic was highly differentiated.

The Patient Experience

*Patients First!* implied attention to the experience of each patient as he or she received care. While outcomes were the ultimate measure of success, patient perceptions were strongly affected by the care experience. Nationally, the trend had been to improve the service experience and collect data on patient satisfaction, including waiting times, physical facilities staff courtesy, and clinician communication, especially around medications and pain management.

In 2007, Cleveland Clinic became the first health care organization to appoint a Chief Experience Officer. Efforts began by encouraging doctors and nurses to ask patients, “What else can we do for you while you are here?” This alerted clinicians to special care needs, anxiety, or depression, and alerted staff to issues about food or the room. Among the new amenities were more and quieter single rooms, with pull out beds on which family members could sleep, and redesigned gowns that resembled bathrobes (with a slit in the back for a stethoscope and a special pocket for a pacemaker).

Clinic leaders wanted to instill a culture of service, where everyone was responsible for owning the patient experience. In partnership with Gallup, beginning in 2007, the Clinic annually surveyed all employees to assess their commitment and connection to the Clinic’s purpose, and they reported employee engagement results relative to other companies. Based on results, managers developed action plans to improve engagement of individual employees, and by 2011, over 4800 plans had been created and implemented. Clinic leaders included engagement scores in the annual reviews of managers after seeing that locations where engagement was in the top 25th percentile had higher improvement in patient experience metrics.

Dr. James Merlino became Chief Experience Officer in 2009. Merlino worked to make patient experience insights more tangible by asking the question: “How can processes and metrics drive improvements in the patient experience.” He identified three critical areas: effective processes, caring caregivers, and engaged patients. The Clinic learned that patient experience metrics were in the 90th percentile or above when nurses rounded hourly, so hourly rounding was mandated for all Clinic hospitals. Leaders also learned that physicians improved the way they communicated with patients after seeing how patients rated their communication skills. Merlino worked to improve care coordination and patient transitions by encouraging managers to think beyond the processes in their direct control and explicitly consider how the patient experiences the continuum of care.

Traditionally, non-physicians at Cleveland Clinic had been designated as “non-professional staff” whether they were nurses, technicians, therapists, janitors, or IT experts. In 2010, Dr. Cosgrove changed the designation of all employees to Caregivers. Working with Joseph Patrnchak, Chief Human Resources Officer, Merlino implemented a half-day cultural change exercise entitled “The
Cleveland Clinic Experience.” Employees, including physicians, engaged in facilitated small-group discussions about the mission, vision, values, patient experience and service standards of the Clinic. Between September 2009 and May 2010, all 42,000 employees participated. By 2011, patient satisfaction improved and patient complaints dropped measurably. Overall Caregiver engagement relative to other organizations rose from the 38th percentile in 2008 to the 51st percentile in 2011.

Another new practice was Leadership Rounding to discuss challenges and celebrate caregivers. In groups of two or three, 110 Clinic leaders each month talked with nurses and patients using a checklist of questions. The leaders met afterwards for discussion and action on items of opportunity.

Wellness

The Clinic had significantly increased its focus on wellness, beginning with its own employees who were covered by a self-insured health plan at an annual cost of $250 million. Chief Wellness Officer, Dr. Michael Roizen, was a nationally-known author on managing one’s health.

In 2005, Dr. Roizen launched an employee wellness program, with smoking as the first major initiative. The Clinic supported ballot initiatives to ban smoking in public places. Unspent money committed to that campaign was used to make smoking cessation classes free to everyone in Cuyahoga County (the Clinic’s home) for six months in 2006. The county achieved twice the quit rate of the rest of Ohio. The Clinic announced that it would no longer hire smokers and offered smoking cessation classes to any employee who needed them. By 2007, the Clinic had become an entirely smoke-free environment, and Cuyahoga County had gone from having the highest incidence of smokers in the state to the lowest.

Like many hospitals in America, the main Clinic hospital housed several eating facilities, including a cafeteria and two fast food restaurants. Pizza, hamburgers, and fries, however, were not consistent with the lifestyle recommendations made to cardiovascular patients. The Clinic began the process of making both patient food and café food healthier. By 2007, most of the fast food franchises were gone and the Clinic’s cafeteria offered healthy choices, which were priced lower than the less healthy choices that were still available. McDonald’s remained; Dr. Cosgrove explained that he had developed a new respect for the power of long-term contracts.

By 2008, a third of employees had participated in health risk appraisals and programs aimed at behavior change were helping people to lose weight, quit smoking, better manage stress, improve eating habits, and increase physical activity. By 2012, the Clinic had moved away from health risk appraisals in favor of setting up primary care appointments as the starting point. Participating employees could get premium rebates on their health insurance if they met targeted goals. Employees with a targeted illness such as obesity, hypertension, smoking, or diabetes could get free coaching and support through the Clinic’s disease management programs, which had achieved a 36% participation rate. By 2010, annual growth in the Clinic’s employee health care cost had fallen to 1% in contrast to the 8% or 9% growth rate experienced by other employers.

Information Systems

The Clinic had an integrated electronic medical record system using a single common data warehouse organized longitudinally by patient. All applications, whether they were clinical, administrative or financial, were views of this database. The Clinic’s system used the most robust and accepted information standards available for each type of record. Patient records included digital
data and images, test values, doctors’ reports, and extracted values from non-digital data such as echocardiograms. When possible, lab computers and medical devices transmitted data directly to the database. From this platform, MyChart enabled the physician and the patient to access the same information. Patients could see records, request and cancel appointments, request prescription renewals, and notify the doctors about changes to mail or email addresses. The Clinic was actively encouraging all patients to sign up for MyChart in every encounter and through reminders in every bill. For referring physicians, the Clinic provided Dr.Connect, a secure, real-time portal where physicians could review the care being delivered to their patients.

Dr. Martin Harris, Chief Medical Information Officer, was deeply involved in enabling the transformation to institutes and envisioning the types of information technology that would support outcome measurement, learning, and improvement by multidisciplinary teams. Institute teams were defining cycles of care for patients with particular medical conditions, and the IT group was developing support tools for each type of patient encounter in the care cycle. When clinicians developed new insights to support better care, these could be quickly incorporated in the system to support physicians throughout the institute, regardless of location. Dr. Harris emphasized that the goal of this custom development was to best support each institute’s particular care processes and spur real-time knowledge generation and dissemination across the system. Dr. Harris had also become the executive responsible for systems integration throughout the Clinic’s facilities and among all affiliated physicians.

MyPractice, the Clinic’s electronic medical record, served all Cleveland Clinic physicians. MyPractice went beyond electronic order entry and brought together the full electronic medical record system including clinical and administrative data. MyPractice Community was available to physicians in private practice for a monthly fee, whether or not they were affiliated with the Clinic. It came pre-populated with patient data from all previous encounters within Cleveland Clinic health system and was able to transmit prescription and laboratory orders electronically, collect key process and outcome measures, and share clinical information across the Cleveland Clinic system. As community doctors became part of the Clinic’s institutes, use of the Clinic’s electronic medical record was required in order to improve coordination with the institute’s care processes.

Coincident with the reorganization into institutes, MyChart had been re-designed to encourage sign-up when a patient made an appointment. If patients signed up, they could immediately deal with registration information, worker’s compensation forms, or special insurance considerations for their condition. In addition, condition-specific questionnaires were being developed within the institutes that would replace general medical history forms and would feed directly into the patient’s chart. The chart would be sent to the physician’s inbox 48 hours before an appointment for review before a patient’s visit.

The Clinic was working on architecture that supported a care-cycle view of care. Rather than accumulating separate notes from each patient encounter, an integrated episode of care note was being developed to which multiple team members in different facilities could contribute. Support for the clinical team, such as clinical decision support, suggestions for follow-up scheduling with appropriate doctors, and outcomes tracking, was provided at key steps during documentation. In 2012, development was focusing on 8 diagnoses for which care paths involved multiple stages and facilities.
Reimbursement

Clinic charges were based on Medicare reimbursement rates and negotiated private payer rates, as was the case at most hospitals and health systems. About 43% of Clinic patient volume was insured by Medicare, accounting for 29% of total revenues. Medicaid covered 8% of patient volume and accounted for 4% of revenues. Managed care and commercial payers together accounted for 45% of patient volume and 60% of revenues, with the remainder being self-pay or non-paying patients.

On average, large health plans contracted at rates representing about one-third of posted charges. Patients from outside the region, whether private or covered by a health plan, either paid posted charges or negotiated charges individually. Clinic leaders recognized that it would be simpler and more efficient to have the same prices for all payers, depending only on the service delivered, especially to facilitate referrals from other parts of the U.S. and from international locations. However, this philosophy would have to be introduced slowly because it was a radical departure from health sector norms and historical practices.

In November 2010, the Clinic and Medical Mutual, the largest health insurance company in northeast Ohio, signed an agreement to form an innovative Quality Alliance around achieving excellent outcomes and high value for patients. Physicians, including those who were not affiliated with the Clinic, could sign up if they agreed to three principles of the program. First, they had to provide performance data. The data were mostly process metrics in the beginning, but were expected to progress quickly to outcome measures. Electronic medical records were not required initially, but would be required as data collection shifted to outcomes. Cleveland Clinic’s electronic medical record system for community physicians was available for a monthly fee. Second, participating physicians had to commit to process improvement. Third, physicians had to agree to an annual review; they could fail, but the Quality Alliance was designed to help members succeed in improving processes and outcomes. Reimbursement for physicians participating in the Alliance initially increased. Future reimbursement rates would increasingly depend on outcome data as well as on participation in reporting and improvement in process metrics. The Clinic and Medical Mutual hoped the Alliance would enable pay for value rather than volume. Eventually reimbursement would move to cover teams over episodes of care, rather than reimbursing individual physicians.

Avenues for Growth

The Clinic had grown geographically in a number of ways, with each avenue to varying degrees a work in progress. There was a wide array of growth options regionally, nationally, and internationally. Dr. Cosgrove was considering the various paths for growth. The Clinic could build, buy or partner, and a stream of proposals was making the task more challenging.

Ohio delivery system The Clinic provided 50% of the care in its county and about 25% of the care in the broader northeastern Ohio region. In its region, its main competitor was the University Hospitals Health System (UHHS) associated with The Case Western Reserve University. The UHHS system served patients at over 150 locations in northeastern Ohio with 3 million outpatient visits and 110,000 inpatient discharges annually. The Clinic also competed with seven smaller health systems in the northeastern Ohio area. The Clinic could potentially expand its presence in Ohio and neighboring states. It had been approached by a number of hospitals in the region that were interested in mergers or other types of relationships.

Affiliates programs In 2012, the Clinic operated affiliate programs in cardiac surgery and kidney transplant. The cardiac surgery affiliates program was the most developed and included 5
hospitals in Ohio and 7 cardiac surgery groups in Rochester, New York; West Chester, Pennsylvania; Weston, Florida; Florence, South Carolina; Fayetteville, North Carolina; Pikeville, Kentucky; and Winnfield, Illinois. The affiliates accounted for 50% of the cardiac surgery case volume.

In the early years of the program, affiliated cardiac surgeons became employees of Cleveland Clinic and practiced under Clinic management. In 2012, the compensation model differed by site and not all of the surgeons were Clinic employees. In return for a fixed fee, the Clinic took over a variety of other functions: physician recruitment and management; support staff (surgical assistants, perfusionists) recruitment, education, and management, including training at the main campus if needed; Clinic protocols, procedures, practice guidelines, and patient education materials; technology improvement; joint program marketing and brand development; managed care contracting; insurance, and clinical risk reduction; standardization and procurement of equipment and supplies; quality assurance and results measurement; and overall planning and budgeting. The Clinic had dealt with everything from psychiatric problems with staff to too many wound infections and doctors not answering their pages.

In 2012, the cardiac surgery affiliate program was led by Dr. Bruce Lytle, Chair of the Heart and Vascular Institute, and managed by Dan Towarnicke, director of the institute’s outreach programs. Dr. Cosgrove explained, “Every place where we have gone, the quality has risen measurably, and volume has risen.” Affiliate outcomes had risen to at or near the outcome at the main campus, though affiliates tended to operate on patients with fewer risk factors. Affiliates were encouraged to refer particularly difficult cases to Cleveland Clinic or another appropriate hospital. The Clinic was also involved in overall cardiac care at affiliates, including program monitoring, intensive care unit monitoring, and management of perfusionists. However, it had not taken over management of cardiology practices or other services in the cardiovascular area.

New cardiac surgery affiliate opportunities were emerging, as surgeons and administrators at other hospitals approached the Clinic. Several new affiliations throughout the U.S. were under consideration.

The Clinic also established an affiliate program in kidney transplants, managed by the Urological and Kidney institute. This program had Cleveland Clinic transplant affiliates in Charleston, West Virginia and Indianapolis, Indiana. In total, the institute performed 156 kidney transplants in 2010 and a total of 3770 since the Clinic’s first in 1963.

Out-of-state hospitals In addition to the Weston Hospital and ambulatory care facility, Cleveland Clinic Florida had established another outpatient facility in Palm Beach in 2007, and hoped to create a significant presence in Florida. Financial results had improved (Exhibit 3). In 2012, Weston had 175 physicians in 35 specialties. The plan was to integrate the Weston campus with the Clinic as a whole, sharing knowledge, training, and information systems. The Weston physicians, however, remained a separate group with a traditional departmental structure.

In Las Vegas, Nevada, the Lou Ruvo Center for Brain Health opened in 2010, to provide state-of-the-art care for cognitive disorders and for the family members of those who suffer from them. The center, donated by Las Vegas businessman Larry Ruvo in memory of his father, would treat patients with degenerative brain diseases and coordinate all of the Clinic’s research on brain disorders. Dr. Cosgrove explained, “This gives us an unparalleled opportunity to concentrate on neurodegenerative diseases and a great introduction to a new community and a new region of the U.S.”

National telemedicine The Clinic offered an on-line second opinion service called MyConsult. This service was started in 2001 for 300 life-threatening or life-altering diagnoses.
Modifying between 15% and 20% of the diagnoses it reviewed, MyConsult had become profitable by 2004. In 2012, MyConsult, offered second opinions for over 1000 life-threatening or life-altering diagnoses for a fixed fee. It served over 400 patients. Patients could consult MyConsult directly or through their doctor. The service reviewed specified information sent electronically, including notes and digital images. It checked the diagnosis and the recommended treatment plan. State-level licensing rules meant that the Clinic was required to have physicians licensed in every state in which the service was provided. The opportunities to improve treatment plans and diagnoses were significant and were modified in about 17% of the cases reviewed. Nationwide, the rate of diagnostic errors had been estimated at twice that high. Further expansion of telemedical offerings was under consideration.

**International expansion** The Clinic attracted patients from around the world (Exhibit 8). This led to numerous discussions about establishing facilities and partnerships in various countries. In Canada, some citizens traveled to the U.S. to avoid wait times or for sophisticated services such as heart surgery. Historically, the Mayo Clinic and Johns Hopkins received the largest shares of Canadians based on brand recognition. Given Cleveland’s proximity to Toronto, the Clinic opened an executive health and wellness service there in 2006 to attract more Canadians. The new service provided physical examinations, preventive care and referrals to services at the Clinic or to a Canadian provider, with services at the Clinic paid out of pocket.

All 50 of the center staff were Canadian doctors, which had limited their interaction with Clinic physicians and their knowledge of Clinic services and care processes. Dr. Cosgrove explained, “Our mistake was not introducing enough of our culture and people, and now we need to provide them a transfusion.” In 2010 and 2011, numerous programs and visits by physicians were implemented to infuse culture and build relationships. The CEO of Cleveland Clinic Canada also made monthly visits to the main campus. Over time, revenues were increasing, losses at the Toronto site were declining, and referrals to the main campus increased.

In Abu Dhabi, the Clinic had signed a long-term contract to manage Sheikh Khalifa Medical City, a comprehensive health system including a 570-bed hospital, 14 specialized outpatient clinics, six family medicine clinics, two urgent care centers, two dental clinics, a blood bank and a 125-bed psychiatric hospital. By 2011, operational improvement had reduced waiting times and improved satisfaction ratings. Management also had piloted an employee wellness program and converted all facilities to healthy eating zones with no fried foods.

The Clinic had a contract to manage the construction of a new 360-bed hospital and outpatient clinic, named Cleveland Clinic Abu Dhabi, which was scheduled to open in 2013. It would include more than 20 medical and surgical sub-specialties organized in five institutes: Heart and Vascular, Digestive Disease, Respiratory Disease, Eye, and Neurological. Full financing came from the UAE government, and the Clinic could choose whether to manage the new facility on an ongoing basis. Once the new facility was operational, the Clinic would be responsible for 50% of the health care in Abu Dhabi, with Abu Dhabi accounting for a meaningful percentage of the Clinic’s overall operating income. Dr. Cosgrove described the project as an opportunity to improve care and as a learning lab.

Dr. Ken Ouriel, the Clinic’s Chief of Surgery before the reorganization into institutes, was the Clinic’s first CEO of the Sheikh Khalifa Medical City hospital. He led a team of six Clinic employees from Cleveland including a chief administrative officer, a chief medical officer, and chief operating officer as well as staff experts in purchasing, finance and IT. As part of the agreement, the Clinic would bring doctors to the U.S. for training, paid for by the UAE government. In 2011, Dr. Jeff Staples, who had no prior Cleveland Clinic affiliation, became the fourth CEO of Sheikh Khalifa
Medical City. Dr. Marc Harrison, Cleveland Clinic’s Chief Medical Operations Officer, became CEO of Cleveland Clinic Abu Dhabi.

The Clinic had been approached by many other countries, and faced a stream of opportunities. In 2007, for example, Clinic leaders seriously explored buying or building general hospitals or specialty cardiac hospitals in Austria, England, India and China. By 2012, each of these initiatives had been discontinued, though other proposals continued to arrive.
Exhibit 1  Cleveland Clinic Total Operating Revenue and Operating Income, 2000–2010

Source: Cleveland Clinic “State of the Clinic Annual Report, 2010.”
Exhibit 2  Cleveland Clinic Timeline of Innovations in Cardiac Care (abbreviated)

- 1921: Cleveland Clinic officially opened its doors on February 26
- 1932: Cleveland Clinic established a Department of Cardiorespiratory Disease, the forerunner of today’s Heart Center
- 1951: Cleveland Clinic established its first Department of Pediatric Cardiology; Throughout the Clinic, nurses were organized into specialized services, including a "chest" service to help manage patients undergoing heart and lung surgery
- 1958: Specialized nursing care for Cleveland Clinic Hospital cardiac patients began with the opening of the Constant Care Unit's "Heart Room"
- 1967: Cleveland Clinic heart surgeon pioneered coronary bypass surgery, a new method for ensuring adequate blood flow to the hearts of patients with severe coronary artery disease
- 1967: The Clinic's first Cardiovascular Unit opened in the hospital, with its own operating suite, intensive care unit and stepdown unit
- 1968: Cleveland Clinic's first heart transplant took place
- 1971: Cleveland Clinic cardiothoracic surgeon and colleagues confirmed the clinical application of an alternative bypass technique that produced better results than the original procedure, which involved using a vein taken from the leg. The surgeons also refined other cardiac surgical techniques, performed long-term follow-up on bypass patients, and devised measures to help lower the cost of hospitalization following cardiac surgery
- 1972: Cardiovascular specialists established a cardiovascular information registry, the world's first computerized registry of data on cardiac diagnosis and treatment
- 1976: America’s first department of Cardiothoracic Anesthesiology was founded at Cleveland Clinic
- 1980s: Cardiothoracic surgeon Delos M. Cosgrove, M.D., developed a computerized device that monitored a patient's condition during recovery from heart surgery and automatically administered drugs as needed. The new device reduced post-surgical complications
- 1985: The Cardiac Health Improvement and Rehabilitation Program (CHIRP) was founded to promote health recovery and wellness of cardiac patients in the Heart Center
- 1985: Cleveland Clinic performed its first pediatric heart transplant.
- 1991: Delos M. Cosgrove, M.D., pioneered aortic valvuloplasty, a procedure that allowed surgeons to repair rather than replace, certain diseased heart valves. The procedure enabled better blood flow, minimizes clotting and was especially appropriate for older patients
- 1993: The National Institutes of Health named Cleveland Clinic one of three centers selected to continue research toward developing a totally implantable artificial heart. The Heart Center's Department of Thoracic and Cardiovascular Surgery performed 3420 cardiac operations, making it the largest open-heart surgery center in the United States.
• **1995**: The Heart Center was named 'number one in America' for the first time in U.S. News & World Report's annual 'Best Hospitals' survey. It remained number one for every year through 2006

• **1996**: A Heart Center clinical trial testing implantable cardiac defibrillators in high-risk, post-heart attack patients with arrhythmias was stopped early. Cardiothoracic surgeon Delos M. Cosgrove, M.D., performed the world's first minimally invasive heart valve surgery

• **1997**: Cleveland Clinic Heart Center was the busiest cardiac surgery center in America, holding a commanding lead in the number of open heart surgeries it performed: 4,500

• **1998**: The Heart Center performed 113 heart transplants in a single year, a new world record. The survival rate for these patients was 95%, well above the national one-year survival rate of 83%

• **2003**: Cleveland Clinic Heart Center Transplant Program completed its 1,000th heart transplant. Only two other hospitals across the nation achieved this milestone, according to the United Network for Organ Sharing

• **2004**: Research conducted by Cleveland Clinic showed that combining a simple treadmill test with a global health risk assessment could help to determine a person’s mortality risk even when that person did not have signs or symptoms of cardiovascular disease

• **2006**: A new device was developed to exclude (block blood flow to) the left atrial appendage, the primary source of stroke in patients with atrial fibrillation. The relative simplicity of the treatment made an attractive alternative to more complex interventions.

• **2006**: A multi-center national study led at Cleveland Clinic showed that intensive use of statins resulting in a decreased LDL and increased HDL can reverse the build-up of plaque in coronary arteries.

• **2007**: Cleveland Clinic had the world’s most extensive experience in bronchial revascularization in lung transplant. Though far more difficult than conventional lung transplant, bronchial revascularization allowed for full reperfusion of the bronchia, and reduced post-transplant complications and speed healing.

• **2008**: Clinic scientists discovered that a specific gene (NUP155), when mutated, was linked to atrial fibrillation. The finding may provide a new molecular target to develop patient-tailored treatment strategies.

• **2008**: The Clinic’s 100th pediatric heart transplant was performed.

• **2009**: Cleveland Clinic led the world in surgeries of the thoracic aorta, performing 900 procedures, approximately two a day, and achieving better than average outcomes.

• **2009**: The world’s first dual heart and liver transplant was performed on a patient being supported by a total artificial heart.

• **2010**: The first major investigation of percutaneous aortic valve replacement was co-led by Cleveland Clinic. Patients improved by all measured criteria using the new technique.

Exhibit 3  Florida Operating Income, Fiscal Year, 1992-2010

Exhibit 4  Cleveland Clinic Regional Hospitals and Family Health and Surgery Centers, 2012
Exhibit 5  List of Institutes in 2012

CLINICAL INSTITUTES
Eye
Dermatology and Plastic Surgery
Digestive Disease
Emergency Services
Endocrinology and Metabolism
Urological and Kidney
Head and Neck
Heart and Vascular
Medicine
Neurological
OB and Women’s Health
Respiratory
Cancer
Wellness
Pediatrics and Children’s Hospital
Orthopedic and Rheumatologic

SPECIAL EXPERTISE INSTITUTES
Anesthesiology
Arts and Medicine
Center for Personalized Healthcare
Education
Genomic Medicine
Imaging
Research
Nursing
Pathology and Lab Medicine
Quality and Patient Safety

Source: Cleveland Clinic company documents.
**Exhibit 6**  Cleveland Clinic Heart and Vascular Institute Outcomes 2010, Table of Contents

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Exhibit 7  Cleveland Clinic Vascular Surgery Hospital Mortality, 2010


Exhibit 8  International Patient Distribution by Country, 2010

Source: Cleveland Clinic “State of the Clinic Annual Report, 2010.”
Endnotes

1 The drop from 6% in the early 1990s was mostly due to a change in measurement from the number of international patient visits to the number of unique international patients, some of whom make multiple visits. There was a temporary drop in international patients after terrorist attacks in the U.S. in 2001, which had since recovered.

2 To see the Clinic’s outcomes books, go to http://cms.clevelandclinic.org/quality.cfm?id=736.

3 For example, Clinical procedural terminology, CPT4; and evaluation and management codes, E&M; national drug code (NDC); and standard disease categorizations from International Classification of Diseases (ICD), and data exchange using the Health Level 7 standard.

4 Some data views for the patient were delayed until the physician had communicated with the patient. Originally, only part of the chart was available to the patient; in 2007 Dr. Cosgrove opened all current and future physician notes to the patient.

5 A perfusionist operates the heart-lung machine during cardiac surgery.