



Case Study

Organized Health Care Delivery System • August 2009

Henry Ford Health System: A Framework for System Integration, Coordination, Collaboration, and Innovation

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ABSTRACT: Henry Ford Health System is a vertically integrated health care system in southeastern Michigan whose leadership is committed to systemic integration, clinical excellence, and customer value through the core competencies of collaboration, care coordination, and innovation and learning. Henry Ford's care innovation initiatives are multidisciplinary, team-led projects that target improvements in quality measures and evidence-based standards through problem-solving and the identification of common metrics to build consensus. The collaborative approach, fostered by shared vision and values, facilitates transformation throughout the system. Moreover, Henry Ford's integration of care delivery and coverage facilitates quality monitoring, measurement, and improvement activities.



OVERVIEW

In August 2008, The Commonwealth Fund Commission on a High Performance Health System released a report, *Organizing the U.S. Health Care Delivery System for High Performance*, that examined problems engendered by fragmentation in the health care system and offered policy recommendations to stimulate greater organization for high performance.¹ In formulating its recommendations, the Commission identified six attributes of an ideal health care delivery system (Exhibit 1).

Henry Ford Health System (HFHS) is one of 15 case-study sites that the Commission examined to illustrate these six attributes in diverse organizational settings. Exhibit 2 summarizes findings for HFHS. Information was gathered from HFHS leaders and from a review of supporting documents.² The case-study sites exhibited the six attributes in different ways and to varying degrees. All offered ideas and lessons that may be helpful to other organizations seeking to improve their capabilities for achieving higher levels of performance.³

Exhibit 1. Six Attributes of an Ideal Health Care Delivery System

- **Information Continuity** Patients' clinically relevant information is available to all providers at the point of care and to patients through electronic health record (EHR) systems.
- **Care Coordination and Transitions** Patient care is coordinated among multiple providers, and transitions across care settings are actively managed.
- **System Accountability** There is clear accountability for the total care of patients. (We have grouped this attribute with care coordination, since one supports the other.)
- **Peer Review and Teamwork for High-Value Care** Providers (including nurses and other members of care teams) both within and across settings have accountability to each other, review each other's work, and collaborate to reliably deliver high-quality, high-value care.
- **Continuous Innovation** The system is continuously innovating and learning in order to improve the quality, value, and patients' experiences of health care delivery.
- **Easy Access to Appropriate Care** Patients have easy access to appropriate care and information at all hours, there are multiple points of entry to the system, and providers are culturally competent and responsive to patients' needs.

ORGANIZATIONAL BACKGROUND

Henry Ford Health System (HFHS), founded in 1915, is a not-for-profit integrated health system headquartered in Detroit, Michigan, with 21,500 employees and \$3.5 billion in annual revenue in 2007. HFHS provides comprehensive acute, post-acute, specialty, primary, and preventive care services through more than 3 million patient contacts annually, including 93,000 inpatient admissions. Its market share represents 10 percent of acute care and 20 percent of ambulatory care services delivered in southeast Michigan.

The system owns and operates seven hospitals. Henry Ford Hospital, the system's flagship in midtown Detroit, is a 900-bed tertiary care hospital and level 1 trauma center, and the second-largest nonuniversity teaching hospital in the United States. Other inpatient facilities include five suburban community hospitals ranging in size from 200 to 435 beds, a 100-bed psychiatric hospital, and a 175-bed specialty hospital offering physical rehabilitation and chemical dependency treatment. Community care services include pharmacies, skilled nursing, home health, hospice, and dialysis services.

Henry Ford Medical Group (HFMG) employs 1,100 physicians and scientists who staff Henry Ford

Hospital and provide ambulatory care in 25 outpatient medical centers ranging from small primary care clinics to large multispecialty centers (Exhibit 3). The Henry Ford Center for Health Services Research collaborates with HFMG physicians to conduct research focusing on outcomes, effectiveness, and cost-effectiveness of the prevention, diagnosis, treatment, and management of common clinical problems.

Health Alliance Plan (HAP) is a wholly owned subsidiary, acquired in 1979, that offers individual, group, and Medicare managed care and consumer-directed insurance products to 545,000 members in southeast Michigan (Exhibit 4). HAP covers approximately one-third of HFMG patients (under full-risk capitation payment) and accounts for about one-quarter of the health system's total patient care revenue (Exhibit 4). Medicare and Medicaid account for 33 percent and 11 percent of patient care revenue, respectively, with other commercial payers covering the remainder.

The organization's mission is "to improve human life through excellence in the science and art of health care and healing," and its vision is "to put patients first by providing each patient the quality of care and comfort we want for our families and for

Exhibit 2. Case Study Highlights

Overview: Henry Ford Health System is a not-for-profit integrated delivery system serving more than 1 million residents of southeastern Michigan with acute, post-acute, specialty, primary, and preventive care services supported by clinical education and research. The system includes seven hospitals (including Henry Ford Hospital, a large teaching institution and trauma center); 1,100 physicians and scientists in the multispecialty Henry Ford Medical Group who staff Henry Ford Hospital and practice in 30 outpatient medical centers; community care services including pharmacies, skilled nursing, home health, hospice, and dialysis services; and the Center for Health Services Research. The 545,000-member Health Alliance Plan offers group, individual, and Medicare coverage through contracted providers.

Attribute	Examples from Henry Ford Health System
Information Continuity	<p>An electronic health record (EHR) is shared across all group-practice sites, and is viewable by external physicians for common patients. EHR alerts identify adults who are due for preventive care, for screening or tests for diabetes or blood lipid disorders, or for anticoagulation (blood thinning) therapy.</p> <p>A regional electronic prescribing initiative collaborates with large purchasers and retail pharmacies. A digital imaging system provides fast access to radiology studies.</p> <p>A patient Web portal provides online access to health information, appointment and test scheduling, and e-visits with physicians.</p>
Care Coordination and Transitions; System Accountability*	<p>Coordination is a key system attribute, e.g., intensively managing patients with uncontrolled diabetes; monitoring diabetic patients' blood glucose levels during transitions from inpatient to outpatient care and in the home; monitoring anticoagulation therapy.</p> <p>An advanced medical home, with redesigned care processes and a series of chronic disease management interventions to meet stratified patient-population needs, is being piloted in three clinics.</p> <p>Point-of-care laboratory testing provides immediate feedback to providers and patients, and enables timely modifications in therapy during clinic visits.</p>
Peer Review and Teamwork for High-Value Care	<p>Multidisciplinary teams implement a seven-pillar strategic framework (based on Baldrige Award criteria) to promote integration, service excellence, process improvement, and efficiency to create an overarching "Henry Ford Experience." The Care Innovation Steering Committee oversees multidisciplinary physician-led teams that redesign care processes.</p> <p>Incentives, awards, and recognition are key ingredients in reinforcing commitment. Incentives are tied to success in achieving strategic goals. An "e-dashboard" communicates systemwide performance on quality and satisfaction.</p>
Continuous Innovation	<p>Participation in learning collaborations, consistent use of evidence-based bundles of care, and rapid response teams have improved patient safety and reduced inpatient mortality.</p> <p>Researchers collaborate with physicians to pilot clinical improvements such as motivational interviewing and medication adherence monitoring via the EHR.</p> <p>Behavioral health services redesigned depression care, leading to a 75 percent drop in the suicide rate among health plan members.</p>
Easy Access to Appropriate Care	<p>"Advanced access" scheduling offers same-day appointments for primary care, and has led to a 30 percent reduction in average appointment waiting time. A centralized contact center improves customer service. After-hours walk-in urgent care is available at selected medical centers.</p> <p>E-visits use logic to elicit the nature of patients' complaints for review by their physicians. Patients can enter blood pressure and blood glucose readings for review by care teams.</p> <p>Behavioral health services are colocated in some outpatient medical centers. There are work-site chronic care programs and a clinic at a major employer site.</p> <p>Research and outreach help reduce health disparities. School-based health centers and self-care kiosks in local churches promote health in the community.</p>

* System accountability is grouped with care coordination and transitions, since these attributes are closely related.

ourselves.” It is governed by a board of trustees and advised by affiliate and advisory boards representing local communities. HFMG physicians elect a board of governors who set policy and oversee the group practice. HAP members elect one-third of its board; HFHS appoints the remainder.

INFORMATION CONTINUITY

Clinicians in the Henry Ford Medical Group use an internally developed electronic health record (EHR), called CarePlus Classic, that contains almost 20 years’ worth of patient data on outpatient services and most inpatient services. Independent physicians who treat Henry Ford patients can access patient health records online. The EHR incorporates an Electronic Picture Archiving and Communication System (ePACS) that gives physicians rapid access to radiology studies and has reduced by one-half the time needed for image processing, storage, retrieval, and reporting.

Two population health management tools have been built into the EHR. The first is a “traffic light” system that uses red-, yellow-, and green-colored alerts to notify physicians when their patients are due or overdue for screening or tests for diabetes or blood lipid disorders (high cholesterol), or for anticoagulation (blood thinning) therapy. A preventive services icon also uses the traffic light system to alert providers

when adult patients are due or overdue for preventive care such as cancer screenings and immunizations.

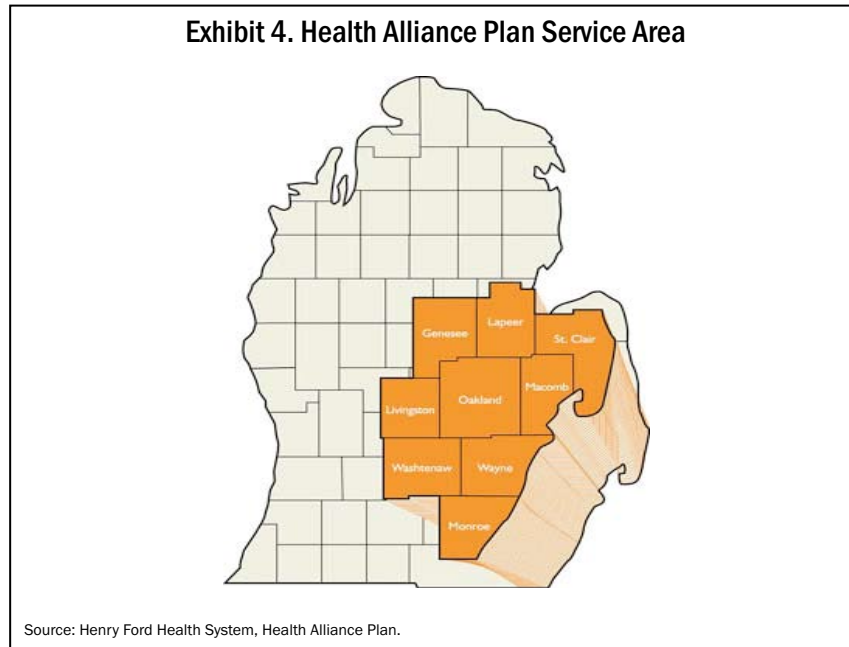
Henry Ford is investing \$40 million to develop an enhanced version of the EHR, called CarePlus Next Generation, that will be available systemwide through wireless and mobile devices. Enhanced features will include inpatient computerized physician order entry (CPOE), care planning and patient-panel management tools, alerts and reminders, and electronic medication administration tracking. Implementation is planned for the end of 2009, with CPOE functionality to follow in 2010.

Patients of HFHS have access to an online Web portal called MyHealth, where they can make appointments for primary care visits and routine mammograms, refill prescriptions, view lab and other test results, and communicate health concerns to their physician through e-mail or an e-visit (described further below). HAP offers an interactive online decision support system with information on self-care, support groups, and treatment costs.

The Corporate Data Store, with more than 5 million patient records, facilitates program effectiveness analysis, performance measurement, clinical research, and population health management.

In collaboration with Detroit’s automobile companies and HAP, HFMG served as the incubator site





for developing an electronic prescribing system linked to retail pharmacies as part of the Southeast Michigan ePrescribing Initiative. Following a successful pilot test, the system was deployed across HFMG and is being spread regionally and statewide through pay-for-performance incentives offered by HAP and Blue Cross Blue Shield of Michigan. Today, HFMG physicians write about 140,000 e-scripts per month (Exhibit 5) using a Web portal or a wireless device such as a smart phone or tablet computer.⁴

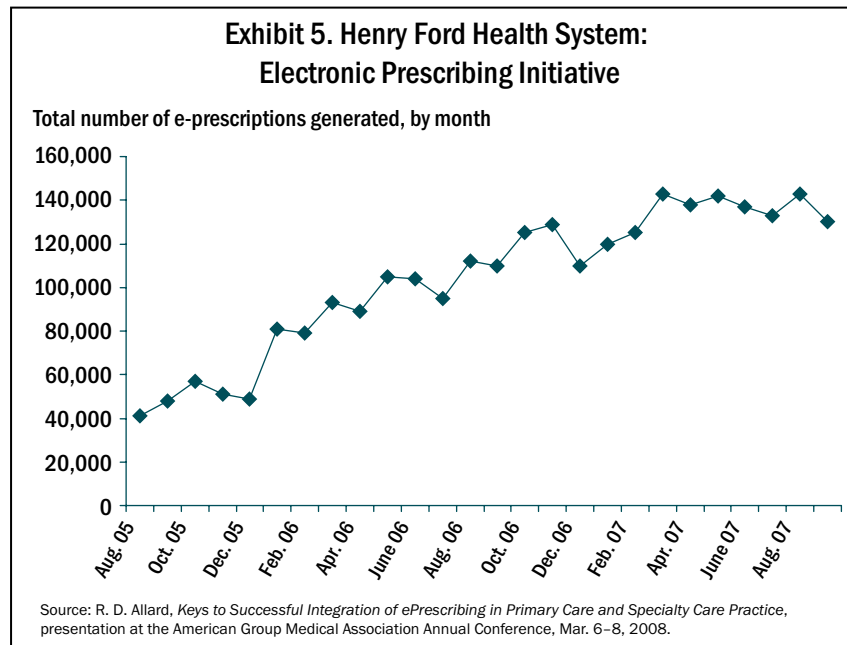
The e-prescribing system, which is linked to Henry Ford's EHR, improves patient safety by preventing prescription errors due to illegible handwriting and by warning physicians of drug allergies and interactions. Physicians cancel or change about 10 percent of prescriptions because of these warnings, resulting in a reported 24 percent reduction in the incidence of patients receiving highly contraindicated medications (with a 48 percent reduction among pregnant women). When fully implemented, an inpatient module will provide the ability to conduct medication reconciliation across the spectrum of care, from hospital admission to discharge and outpatient follow-up.

Standardization of the prescription renewal process was a critical step in the successful uptake of the system, according to Bruce Muma, M.D., who helped lead the rollout. Although e-prescribing takes

more of physicians' time than paper-based prescribing, it saves time for the care team as a whole owing to a simplified renewal process and fewer phone calls from the pharmacy and the patient. Physicians in pilot sites "were having such a great experience that they started telling all the other doctors...and it spread like wildfire," Muma said. Physicians also cite the ability to document and obtain prescription history and to ensure patient safety as one of the system's greatest benefits.

HFHS estimates that its capital investment of \$1.6 million in the e-prescribing system, plus annual operating costs of about \$600,000, will yield a \$14 million return on investment over five years (2005–2009) from the increased use of generic drugs (which has risen from 57 percent to 75 percent of prescriptions), from administrative simplification, and from a reduction in adverse drug events. The system also improves convenience for patients by proactively identifying whether drugs are covered by insurance, by speeding prescription refill requests, and by reducing waiting time at the pharmacy.

"The integrated delivery system in place within the Henry Ford Medical Group allowed for the value of e-prescribing to be maximized very quickly. That value includes improved safety, efficiency, and effectiveness," said Matt Walsh, associate vice president for purchaser initiatives at the Health Alliance Plan. "HAP



used the lessons learned from that implementation to help independent physicians throughout Michigan achieve the same value in less time and with less effort than would have been possible otherwise.”

CARE COORDINATION AND TRANSITIONS: TOWARD GREATER ACCOUNTABILITY FOR TOTAL CARE OF THE PATIENT

Care coordination is one of three core organizational competencies (also encompassing collaboration and innovation) that HFHS has identified as keys to delivering customer value. As such, it is an inherent part of the planning and quality improvement activities undertaken at HFHS. These efforts are illustrated in initiatives aimed at improving care for patients with chronic illness, who command a large share of health care resources.

Improving Care Coordination for Patients with Chronic Illness. In 2005, the Henry Ford Medical Group embarked on the Chronic Care Excellence Initiative to redesign chronic care management based on Wagner’s Chronic Disease Model and the six aims for improving the health care system outlined in the Institute of Medicine’s report, *Crossing the Quality Chasm: A New Health System for the 21st Century*. The goal was to “move away from the traditional visit-

centric focus on symptoms and problems to the proactive development of the individuals’ role in managing their healthcare needs.”⁵

Through a series of rapid-design sessions, multidisciplinary planning teams developed and tested strategies to address chronic conditions including diabetes, heart failure, and coronary artery disease. A common element—using midlevel clinicians to deliver care under standardized protocols—required redefining clinical roles and redirecting patient flow. This approach proved to work better for diabetes than for heart conditions.

One enduring product of the initiative is an intensive ambulatory care service for patients with uncontrolled diabetes, now being offered at large medical centers in each HFHS region. Specially trained nurses (certified diabetes educators) follow protocols developed by a team of physicians to intensify medication, lifestyle changes, and education as needed to help patients achieve better control of their disease. Patients who use the service experience an approximate 1 percent average reduction in hemoglobin A1c levels, indicating better control of blood glucose.

This clinical improvement reduces patients’ risk of developing long-term complications, but it has not reduced costs in the short run. “We are paying for it because we’ve proven that it’s effective and

a very efficient way to manage these patients who are dangerously out of control. We're doing it because we know it's the right thing to do," said Bruce Muma, M.D., then medical director for chronic care services. The project also highlighted that many patients are not ready to commit to intensive management of their disease—only about one-third of diabetic patients who are eligible to use the service do so. In response, physicians are working with researchers to test whether an “adherence clinic” (described later) can help motivate patients to engage in such change.

Similar pilot programs embedded nurse practitioners in specialty care departments to help manage patients with heart failure and coronary artery disease (including patients using a lipid clinic described in a previous Commonwealth Fund case study⁶). Although the pilot programs demonstrated good clinical outcomes, they did not receive sufficient referrals from cardiologists to sustain an efficient service. Consequently, those nurses are being redirected to the primary care medical home pilot teams (described below).

In routine primary care, the medical group developed a proactive, systematic process to identify and follow up with diabetes patients who are due for chronic care services or who are not achieving treatment goals—an approach that is being refined in the medical home. Point-of-care laboratory testing (e.g., hemoglobin A1c and lipid tests) provides test results during the patient visit (within 48 minutes of patient arrival, on average, as compared with five days post-visit previously) so that the care team can make immediate changes in therapy and reinforce patient education during the visit.

Overall, the Chronic Care Excellence Initiative appears to have offered a valuable opportunity for organizational learning, with lessons being applied to the development of an advanced medical home model of primary care.

Instituting the Advanced Medical Home. Building on its work to improve chronic care, the Henry Ford Medical Group is piloting an advanced medical home model of primary care in three diverse internal medi-

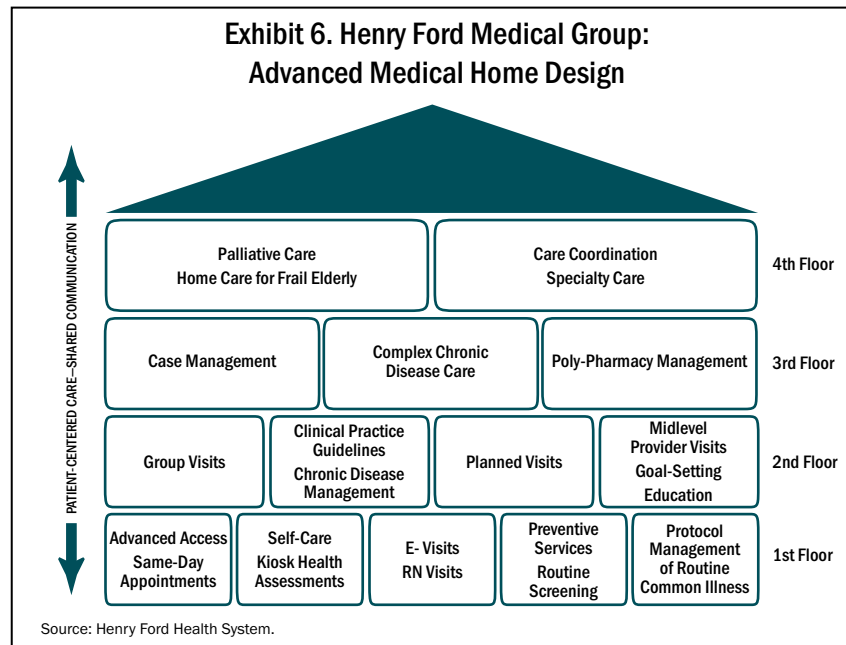
cine clinics, including urban and suburban as well as teaching and nonteaching sites. The impetus for undertaking the pilot came from primary care physicians, who hope to address problems that are challenging primary care medicine nationally, such as the lack of time to address patients' comprehensive care needs during traditional patient visits.⁷

The pilot aims to redesign the care process and link the patient's entire care team—primary care, disease management, hospital, specialty, and other caregivers—to improve quality and safety of care and create a more patient-centered experience. With that goal in mind, pilot clinic design teams attended a workshop on “lean” process improvement techniques, which they used to map patients' journeys through the clinic and to streamline workflow to make the most of patients' time. This also freed staff time for value-added activities such as pre-visit planning to schedule lab work before the visit so that the physician can discuss test results with the patient during the visit.

The teams also heard from a longtime patient whose perspective helped them identify what wasn't working for patients in general and how their experiences might be improved. They learned that patients want an introduction or hand-off from their primary care physician when another member of the care team will be participating in their care. Likewise, patients want to know that their physician is still in charge and available when needed.

Based on these ideas, the teams designed a stratified approach to care that intensifies services according to patient needs. The stratification of population needs can be likened to a four-story home in which patients with increasing needs receive services on higher floors, though services on lower floors also are available to them when needed (Exhibit 6). The physician acts as coordinator, with support from a care team that includes medical assistants, nurses, dietitians, clinical pharmacists, and midlevel practitioners. The home also has a “front porch” representing supportive community services and resources.

Patients in relatively good health use primarily the “first floor” in the medical home for basic services



such as same-day appointments, health assessments, and preventive care. The medical home extends beyond the clinic walls through alternative communication routes such as electronic visits and the location of self-care kiosks in the community (those innovations are described later).

The “second floor” is designed for patients who have a chronic disease that is relatively well controlled but who need attention for ongoing maintenance and occasional flare-ups. Additional services include group visits that offer the opportunity to build social support among patients, planned-care visits with the primary care physician, and visits with midlevel providers for goal-setting, education, and disease management (adapting the heart failure and coronary artery disease clinics described earlier). The project teams have also developed a collaborative goal-setting form and process wherein physicians and patients discuss and agree on achievable lifestyle changes such as weight loss.

The “third floor” and “fourth floor” are designed for patients with complex care needs requiring another team member to help the physician carry out the treatment plan. Services (some of which must be created from scratch) include intensive disease management, medication (poly-pharmacy) management, home care for frail elderly, and palliative care services. At the fourth level, patients with severe conditions such as

end-stage heart failure may receive their advanced medical home services from a specialist.

A medication management pilot project illustrates how the medical home model facilitates redesign of processes. Clinical pharmacists assigned to the primary care teams (for about 10 percent of their workload) screened patients on complex medication regimens in advance of scheduled clinic visits. They found that almost 10 percent required intervention such as a drug or dosage change or laboratory testing to monitor drug efficacy or safety. The pharmacists developed medication plans for individual patients to resolve drug-related concerns including recommended actions to be carried out by the physician or care team. This “mini-pilot” demonstrated three significant advantages to integrating clinical pharmacy into primary care:

- improved efficiency in the medication management process (requiring about half the pharmacist’s time per case as compared with a stand-alone service);
- a reduced risk of medication-related errors in high-risk patients;
- a lowered health care cost trend among participating patients.

Nurse case managers embedded in the clinic provide the added benefit of working closely with primary care physicians and patients to help develop and carry out treatment plans, including titrating medications and communicating physicians' instructions to patients as needed to achieve treatment goals. They complement, and in some cases assume the work of, centralized care managers employed by the health plan, whose role involves coaching patients to develop self-management skills. This embedded case management approach has demonstrated positive results and is now being extended to additional Henry Ford Medical Group clinic sites.

Other Initiatives to Improve Care Coordination.

Community Care Services has developed systems to assure that home care patients receive quality, coordinated care. For example, diabetic patients' blood sugar levels are closely monitored during the transition from inpatient to outpatient care, as well as in the patients' home by visiting nurses. Virtual clinics of nurses and pharmacists monitor home anticoagulant therapy using evidence-based protocols and the EHR. During a period from 2003 through 2007, patients receiving medication safety process improvement services achieved a 14 percent increase in the time they stayed within the target anticoagulation range.

The prototype Prostate Cancer Options Program offers comprehensive care planning in a single session to help patients diagnosed with prostate cancer (and their family members) make informed treatment decisions. The session begins with a nurse-led educational module followed by consultation with specialists. Patients take a short test following the session and receive additional education as needed to fill any gaps in their understanding. A nurse coordinator schedules follow-up care, and the patient's primary care or referring physician receives a summary of the consultation and treatment decision. This comprehensive care planning approach has been expanded to serve patients with breast as well as head and neck cancers; programs for lung and colon cancers are being planned.

Within specialty centers of excellence, multidisciplinary patient case review boards bring together

physicians with expertise in diagnosis, medicine, interventions, and surgery to help decide the best course of treatment for each patient.

PEER REVIEW AND TEAMWORK FOR HIGH-VALUE CARE

Collaboration is another of the three core organizational competencies that Henry Ford Health System has identified for delivering customer value. The organization is managed through a concentric set of leadership teams beginning with a 15-member cabinet of senior leaders and extending to the 110-member Leadership Execution and Planning team, which includes physician chairs and division heads of the Henry Ford Medical Group and hospital chief medical officers. More than 1,000 leaders attend the annual All Leadership Meeting to reinforce engagement in and commitment to the organization's strategic plan and goals.

A "seven-pillar" strategic framework, based on the Baldrige Award Criteria for Performance Excellence, guides all measurement, improvement, and innovation work across HFHS. Multidisciplinary teams address each pillar—People, Service, Quality and Safety, Growth, Research and Education, Community, and Finance—to engineer better processes and to create the overarching "Henry Ford Experience." For example, the System Quality Forum, composed of senior leaders, clinical chiefs, and quality directors, oversees the Quality and Safety pillar. The teams measure the progress of initiatives against goals, direct course corrections when needed, and review and resolve barriers to change.

Ad hoc work teams are formed as needed. For example, the Care Innovation Steering Committee, cochaired by the CEOs of HFHS and HFMG, guided physician-led multidisciplinary work teams that carried out clinical practice redesign projects as part of the Chronic Care Excellence Initiative and the ePrescribing Initiative. HFHS asked Detroit's automobile companies, whose employees represent a large number of patients, to participate on the committee to incorporate employers' perspectives and provide accountability for results.

A primary care council, consisting of primary care physicians elected from within HFMG, works on

identifying best practices and rapidly implementing innovations (such as “advanced access” scheduling, described below) across the group’s medical centers. Teamwork is also central to the primary care medical home. The pilot sites developed a process for scheduling weekly physician-guided care team rounds and multidisciplinary case conferences. In the words of John Popovich, M.D., chair of internal medicine, the goal is “to change practice from an individual sport to a team sport so that physicians have time to do what they do best, and nonphysician caregivers are given more training and responsibility to perform those functions they can do best.”

Incentives, awards, and recognition are key ingredients in reinforcing commitment to the Henry Ford Experience. Senior leaders participate in recognition events, such as the annual “Focus on the People” Awards, that recognize outstanding workforce performance and accomplishments. Quality improvement project teams showcase and receive recognition for their accomplishments at the Annual Quality Expo.

Monetary performance incentives are tied to success in achieving the system’s strategic plan. If the system as a whole exceeds financial targets, and if a business unit also achieves its service targets and budget, then payoffs are commensurate, with every staff member (including physicians) within a business unit getting the same reward, which averaged about \$800 in a recent year. Physicians are eligible for additional performance bonuses based on quality, patient satisfaction scores, pharmacy-use patterns, and group contribution.

Performance feedback (including unblinded patient satisfaction data) is shared quarterly so that physicians can compare themselves to peers locally and nationally. Poorly performing physicians are required to undergo continuing medical education conducted by their peers. An “e-dashboard” provides systemwide distribution of frequently updated quality and satisfaction measures, enabling leadership teams and physicians to monitor progress against benchmarks and assess the results of improvement initiatives.

CONTINUOUS INNOVATION

HFHS has a history of innovation in clinical medicine and health care delivery—the third of its identified core competencies. The systematic application of quality improvement techniques began 20 years ago at HFHS when then-CEO Gail Warden and former senior vice president Vinod Sahney introduced the Henry Ford Quality Management Process, based on total quality management principles.⁸ Today, HFHS’s Office of Clinical Quality and Safety and the Management Services group provide consultation and project support using a variety of approaches such as the “lean” process improvement techniques being applied in the medical home project.

Improving Medication Adherence. The Chronic Care Excellence Initiative and ePrescribing Initiative described above illustrate how HFHS engages in organizational innovation that has spawned additional learning and related innovation. Researchers at the Henry Ford Center for Health Services Research are collaborating with physicians in the medical group on two randomized controlled trials, funded by the National Institutes of Health, to test whether enhanced e-prescribing and related tools can promote medication adherence for almost 5,000 patients with asthma or diabetes.

As part of these pilot programs, the e-prescribing system was enhanced to alert providers about their patients’ medication adherence based on filled prescriptions. Clinicians can use this information to counsel patients and encourage medication adherence.

The study for diabetes includes motivational interviewing techniques “to support individuals in articulating values, resolving ambivalence about values, and planning small steps to build confidence” in setting and adhering to self-management goals. Pharmacists and nurses in an “Adherence Clinic” undergo rigorous training with booster sessions to promote fidelity to the motivational interviewing model. They contact study patients on a regular basis to assess medication adherence, conduct motivational interviews, and intensify treatment when needed

following a physician-approved protocol. The EHR facilitates communication and coordination of care between providers.

Researchers conducted focus groups to obtain input from participating clinicians, staff, and patients on the operational aspects of the interventions and further inform the clinical results. The studies were designed to operate within the existing resource structure of the medical group, with the goal of promoting program sustainability following the grant.

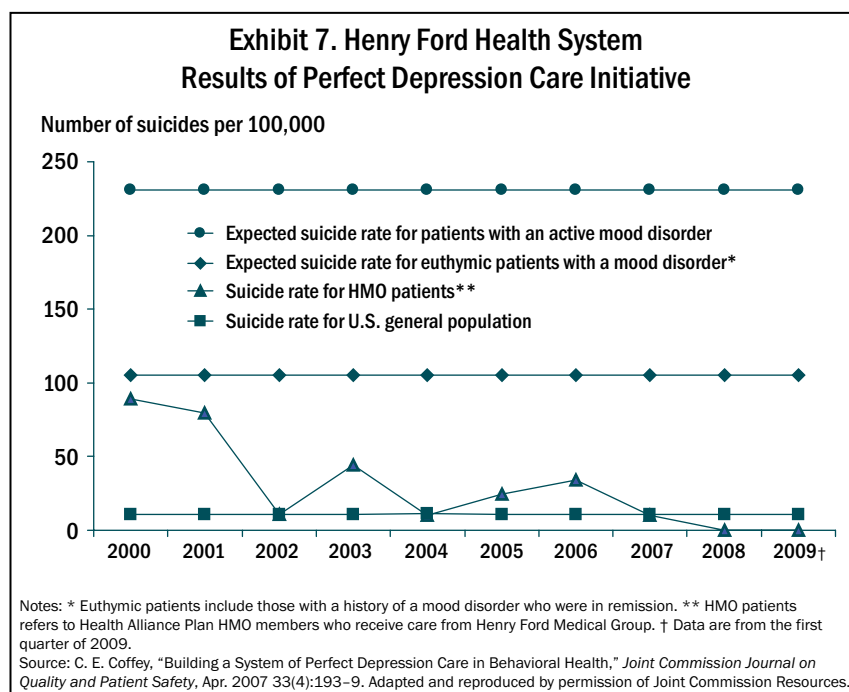
Improving Behavioral Health Care. In 2001, HFHS was one of 12 sites selected to participate in the Robert Wood Johnson Foundation's Pursuing Perfect Care initiative, which aimed to realize the Institute of Medicine's principles for a "21st-century health system." One of the care redesign programs was the Perfect Depression Care initiative, with a "Blues Busters" team led by the Behavioral Health CEO, C. Edward Coffey, M.D., which set an overall "perfection" goal of eliminating suicide by redesigning depression care in four domains:

1. Developing a partnership with patients by establishing a consumer advisory panel and

redesigning the treatment planning process to give patients a bigger voice in their care;

2. Instituting a planned care model to ensure a systematic and evidence-based approach to care, including departmentwide training on cognitive behavior therapy and the creation of protocols to prevent suicide, inpatient falls, and medication errors;
3. Improving access to care by offering drop-in group appointments, led by a psychiatrist and social worker, for medication management and group support;
4. Improving information flow by creating a behavioral health EHR and an informational Web portal for patients and family, and establishing secure e-mail communications between patients and the care team.

Following these improvements in depression care, the suicide rate declined 75 percent among Health Alliance Plan members receiving behavioral health care from Henry Ford Medical Group, from 89 per 100,000 members at baseline, in year 2000, to 22 per 100,000 on average in the follow-up period, 2002–2005 (Exhibit 7). The Blues Busters team sustained



and subsequently improved upon these results, achieving six consecutive quarters without a single suicide among HAP behavioral health patients treated in the medical group through the first quarter of 2009, according to Coffey.

In addition, there were 25 percent to 75 percent fewer patient falls and 33 percent to 40 percent fewer medication errors at the two inpatient units from 2001 to 2003. During that time, the division's gross operating contribution improved from \$0.32 million in 2001 to \$2.4 million in 2003. The division is incorporating its approach as an operating principle and a prototype for redesigning the care process across the psychiatry department.⁹

Improving the Quality and Safety of Hospital Care.

Multidisciplinary teams of physicians, nurses, pharmacists, and other staff at Henry Ford Hospital have participated in a series of learning collaborations with the Institute for Healthcare Improvement (IHI) and other stakeholders since 2002.¹⁰ The teams implemented “bundles” of interdependent evidence-based best practices and other interventions such as work redesign and staff education to improve care. Selected results of collaborative and internal initiatives include:

- 50 percent reduction in the surgical site infection rate from 2002 to 2005;
- 90 percent reduction in ventilator-associated pneumonia among critically ill patients from 2005 to 2008;
- 33 percent reduction in “door-to-balloon time” (time it takes heart attack patients arriving at the hospital to receive cardiac catheterization).

A mortality management program encompassing the components of the IHI's “100,000 Lives Campaign” (plus a bundle of evidence-based interventions for the early detection and treatment of sepsis) was extended to all system hospitals during 2004–2008, leading to a 21 percent reduction in the system-wide in-hospital mortality rate during that time.¹¹ These efforts are continuing as part of a patient and employee

safety initiative called No Harm that aims to eliminate harmful events from the health care experience. Henry Ford Hospital's overall hospital mortality rate was 16 percent better than expected (based on patients' severity of illness) from July 2007 to June 2008, and the lowest among large Michigan hospitals, according to a statistical database maintained by the Michigan Hospital Association.¹²

Nurses across the system have taken responsibility for offering smoking cessation counseling to all hospitalized heart attack, heart failure, and pneumonia patients who smoke. This intervention was added to multidisciplinary rounds and to discharge checklists, resulting in an increase in counseling rates from a range of 40–80 percent to 90–100 percent among the system's three acute-care hospitals.

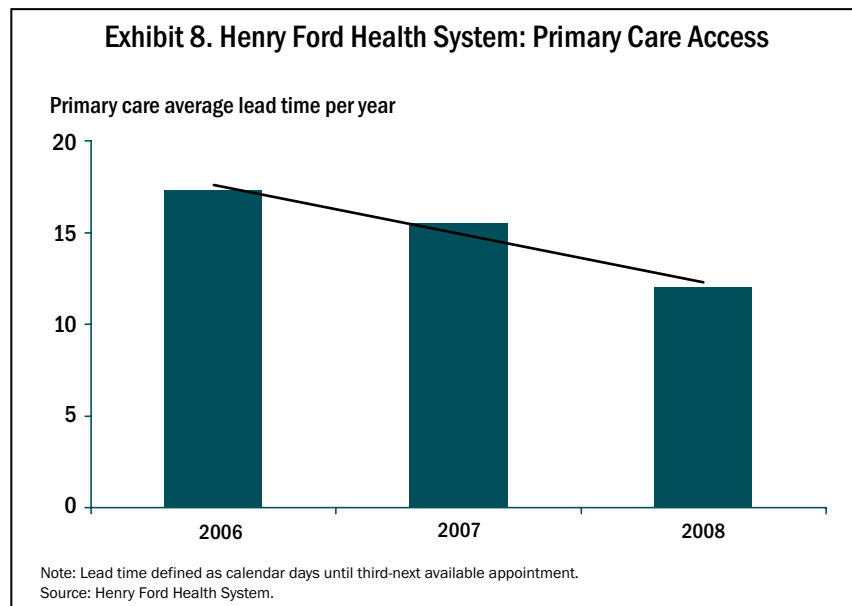
EASY ACCESS TO APPROPRIATE CARE

Making Appointment Scheduling More Convenient.

Henry Ford Medical Group has been working to improve access to care for over 10 years. After discovering that access to care drove overall patient satisfaction scores, the organization embarked on a series of initiatives to promote convenient patient access, such as offering same-day sick-care appointments in primary care clinics. These initiatives were led by cross-functional teams with support from experts in systems engineering. Implementation steps included:

- simplifying patient scheduling by reducing the types of visits offered,
- specifying standard appointment lengths to maintain operational rhythm,
- expanding the roles of midlevel providers in addressing patient needs,
- making physician scheduling changes to meet demand for services,
- instituting a central contact center to standardize scheduling and reduce call abandonment rates.

Following the implementation of this “advanced access” model in 20 primary care clinics, patient



waiting time to the third-next available appointment (a commonly used metric) fell by 31 percent from 2006 to 2008 (Exhibit 8).

The After-Hours Care Service provides walk-in urgent care staffed by primary care physicians during the evenings and on weekends at several Henry Ford medical centers. To make access to care more physically convenient and to help improve continuity between physical and behavioral medicine, some stand-alone behavioral health clinics have been integrated into regular outpatient clinic buildings.

Using Technology to Enhance Access to Care. Henry Ford Medical Group and the Health Alliance Plan are partnering to offer electronic visits for nonurgent health problems with the expectation that they will reduce unnecessary urgent-care visits by enhancing access to a patient's regular provider. HFMG patients can conduct e-visits through the MyHealth patient Web portal, where they select their physician and enter a chief complaint. The e-visit system guides the patient through a series of questions to more fully define the nature of the complaint for the physician (Exhibit 9), who replies through the secure portal. Patients also can enter blood pressure and blood glucose readings to be reviewed by the care team without need of an office visit. These communications become part of the patient's permanent electronic record.

HAP reimburses the medical group \$20 for an e-visit if certain care-related criteria are met, such as a new or modified medication regimen. Patients with other insurance are charged a \$20 copayment for using the service. Preliminary results suggest that e-visits are an efficient communication vector, averaging only 1.3 communication loops between provider and patient before resolution (physicians typically reply to patients within one business day). HAP reports high rates of satisfaction among users of e-visits (exceeding 91 percent on four of five domains) and early signs that e-visits may help improve quality of care for patients with chronic conditions. HAP plans to evaluate the feasibility of reimbursing other provider groups for e-visits once the business case for their use has been fully established, according to assistant vice president Matt Walsh.

Reducing Disparities in Access to Care. Henry Ford's Center for Medical Treatment Effectiveness Programs in Diverse Populations seeks to understand and reduce health disparities for racial and ethnic groups in the Detroit metropolitan area. The center's African American Initiative for Male Health Improvement screens adults for chronic disease—about one-third screen positive for diabetes or hypertension.

Exhibit 9. Henry Ford Health System: E-Visit Information Technology

Henry Ford Health System

Review and Submit

Please review and enter any changes to your responses or other information related to your medical condition in the Additional Comments box provided at the bottom of the page. Click Submit when you are finished or click Cancel to end the e-Visit.

1. How long have you had your earache(s)?
Today (in the last 24 hours)
2. Have you had a fever with your earache?
No
3. Have you had a cough, cold, or sore throat in the past week?
Yes
4. Have you noticed a change in your hearing since your earache(s) began?
Sometimes
5. Have you recently flown on an airplane?
No
6. Do you have any cracking, popping or gurgling in the ear?
No
7. Do you have any dizziness with ear pain?
Yes
8. Did your hearing decrease in the painful ear?
Yes

Additional Comments

Source: Health Alliance Plan.

HFHS is one of six sites participating in a \$25 million controlled trial sponsored by the federal Centers for Medicare and Medicaid Services to reduce racial and ethnic disparities in cancer deaths by improving cancer screening and follow-up care. In the first 18 months of the project, HFHS recruited over 3,000 African American participants and more than doubled screening rates for breast and prostate cancer. Patients are randomly assigned to receive usual care or to have their care coordinated by project nurses who provide education and facilitate appointments and transportation as needed.

HFHS also supports independent community clinics and school-based health centers that provide no-fee or low-cost care. Puff City, a Web-based asthma education program targeted to African American teens in Detroit high schools and supplemented by a referral coordinator to connect students with needed services, was associated with an 80 percent reduced risk of hospitalization, a 50 percent reduced risk of visiting an emergency room, and a 70 percent reduced risk of missed school days.¹³

In a partnership with local churches called Journey to Wellness, HFHS installed touch-screen self-care kiosks in several churches to provide health education to community members. The kiosks address:

- medical conditions such as diabetes, obesity, heart disease, and AIDS;
- healthy living issues such as eating right, calculating ideal weight, exercise, preventive care, smoking, drug abuse, and care for caregivers;
- use of a local doctor directory and other community resources;
- insurance and other issues such as the “power of prayer.”

Offering Services at the Workplace. HFHS and its Health Alliance Plan developed a relationship with Chrysler to staff a health clinic and pharmacy at its headquarters and to provide a work-site chronic care program offering diabetes screening, education, and management services on-site at several factories. Incentive awards encourage employee participation in health-promoting activities based upon identified health risks. Another innovative pilot program offers group classes and alternative and complementary medicine for employees with lower-back pain, and is demonstrating promising results.

A work-site wellness program for HFHS employees promotes preventive care and healthy lifestyles. Eligible employees can earn a \$75 incentive for

participating in an online health risk assessment. Half of those who participate subsequently complete a lifestyle risk-management program addressing issues such as exercise or weight management.

RECOGNITION OF PERFORMANCE

In addition to the results of the specific interventions described above, Henry Ford Health System has achieved notable results on selected externally reported performance indicators and has received recognition for its performance on several national benchmarking or award programs (Exhibit 10).

“HFHS has demonstrated systematic implementation of processes that achieve results for all its stakeholders: patients, their families, physicians, employees, and the community,” said Geri Markley, executive director of the Michigan Quality Council, in announcing Henry Ford Health System’s receipt of the 2007 Michigan Quality Leadership Award (the state equivalent of the national Malcolm Baldrige Award). “HFHS is a role model for other organizations in Michigan and in health care.”¹⁴

Data from the *Dartmouth Atlas of Health Care*, which examined care at the end of life for Medicare patients with chronic illness, paint a mixed picture in regard to efficiency. Those who received the majority of their care at Henry Ford Hospital from 2001 to 2005 had relatively fewer physician visits (87%), an average number of hospital days (103%), and higher Medicare spending per person (115%) compared with the U.S. average. The last measure was not substantially different from that of the overall Detroit hospital referral region where Henry Ford Hospital is located, which is also higher than the U.S. average (116%).¹⁵

The identification of areas of excellence does not mean that Henry Ford Health System has achieved perfection across the board. Like other organizations in this case-study series, it has room for improvement in several areas of care. For example, among 15 physician networks participating in the Health Alliance Plan, Henry Ford Medical Group ranked second on a report card of ambulatory quality measures compiled by the plan for 2007, achieving 42 of 72 possible stars

as compared with 55 of 72 stars achieved by the Huron Valley Physician Association. Henry Ford’s history of improvement suggests that the organization will continue to pursue higher performance as it undertakes and learns from innovations such as the medical home pilot currently under way.

INSIGHTS AND LESSONS LEARNED

CEO Nancy Schlichting assumed leadership at Henry Ford in 2004 and launched a financial turnaround plan for resizing the organization and better integrating its various parts to strengthen both clinical and financial performance. The plan included realizing efficiencies ranging from eliminating redundant layers of administration to cross-marketing services and in-sourcing care to avoid “leakage” of revenues outside the integrated delivery system—in short, taking advantage of the organization’s core strengths.

The turnaround was also notable for maintaining the organization’s commitment to the historical location of its flagship hospital in inner-city Detroit, and for its ability to draw patients there for specialty and tertiary care services. “We had to make it very clear that our number-one priority was clinical quality and service so that people had a good experience when they came,” said Schlichting. Complementing its downtown presence, HFHS has since expanded its network of suburban hospitals with a new, state-of-the-art hospital campus in West Bloomfield that features many patient-centered amenities.

A strategic framework served as the “script” for this transformation, focusing the organization on service excellence, process improvement, and efficiency. The turnaround was not painless, as it required reductions in workforce focused on administrative and support positions in the hospital and necessitated the termination of underperforming physicians. The outcome has been a leaner, higher-functioning organization with greater consistency in vision and values, Schlichting said. Financial performance improved from a \$10 million loss in 2001 to a net income of \$130 million in 2006 and \$106 million in 2007. In 2008, operating income was \$53 million but net income dropped

Exhibit 10. Selected Externally Reported Results and Recognition*

Inpatient Care Quality ¹⁶ (CMS Hospital Compare Jan.– Dec. 2007)	<p><i>Four-topic clinical composite</i> (24 measures): Henry Ford Hospital and Henry Ford Macomb Hospital ranked in the top decile of U.S. hospitals evaluated.</p> <p><i>Heart attack treatment</i> (8 measures): Henry Ford Hospital and Henry Ford Macomb Hospital ranked in the top decile of U.S. hospitals evaluated.</p> <p><i>Heart failure treatment</i> (4 measures): Henry Ford Hospital and Henry Ford Macomb Hospital ranked in the top quartile of U.S. hospitals evaluated.</p> <p><i>Surgical care improvement</i> (5 measures): Henry Ford Hospital and Henry Ford Bi-County Hospital ranked in the top decile, and Henry Ford Macomb Hospital in the top quartile, of U.S. hospitals evaluated.</p> <p><i>Overall patient rating of care</i> (HCAHPS): Henry Ford Hospital ranked in the top quartile of large hospitals reporting.</p>
Ambulatory Care Quality (NCQA Quality Compass 2008)	<p><i>Clinical quality</i> (34 measures): Health Alliance Plan ranked in the top quartile of health plans nationally or regionally on 14 measures and in the top decile of commercial health plans on six measures.</p> <p><i>Patient experience</i> (10 measures): Health Alliance Plan ranked in the top quartile of commercial health plans nationally or regionally on five measures and in the top decile on three measures.</p>
National Recognition and Ratings	<p><i>Verispan Top 100 Integrated Health Networks</i> (2000–2008).</p> <p><i>Thomson/Solucient 100 Top Hospitals: Performance Improvement Leaders</i> (Henry Ford Hospital in 2005, 2007).</p> <p><i>US News & World Report Best Hospitals</i>: Henry Ford Hospital in 2005–2008.</p> <p><i>HealthGrades Distinguished Hospital for Clinical Excellence</i>: Henry Ford Wyandotte Hospital in 2005, 2006; Henry Ford Hospital in 2009; Henry Ford Macomb Hospital in 2009.</p> <p><i>Leapfrog Group Top Hospital</i>: Henry Ford Hospital in 2006, 2007; Henry Ford Macomb Hospital in 2008; <i>National Health System Patient Safety Leadership Award</i> (2008) from the VHA Foundation and the National Business Group on Health.</p> <p><i>National Research Corporation's Consumer Choice Award</i>: Henry Ford Hospital in 2006–07, 2007–08.</p> <p><i>National Committee for Quality Assurance</i>: Health Plan Excellent Accreditation; Diabetes Physician Recognition Program (28 clinical practice sites); Innovations in Multicultural Health Care Award.</p> <p><i>US News & World Report Best Health Plans</i>: Health Alliance Plan ranked among the top 50 commercial plans in 2006 and 2008 and among the top 25 Medicare plans in 2008.</p> <p><i>JD Power and Associates National Health Insurance Plan Study</i>: Health Alliance Plan ranked in the top decile of commercial health plans evaluated nationally in 2008 (104 plans) and in 2009 (128 plans). HAP ranked first in both years among four plans evaluated in Michigan.</p> <p><i>National Business Coalition on Health eValue8</i>: Health Alliance Plan was the Benchmark Plan in 2007 for plan infrastructure such as health information technology; for removing barriers to care; for provider oversight and contracting; and for accreditation and review.</p> <p><i>Joint Commission's Ernest Amory Codman Award</i> (2006) to Henry Ford's Behavioral Health Services for its Perfect Depression Care program.</p> <p><i>American Medical Group Association: Acclaim Award</i> (2003) to the Henry Ford Medical Group for its Pursuing Perfection in Prostate Cancer Care initiative.</p>

* See the [Series Overview, Findings, and Methods](#) for analytic methodology and explanation of performance recognition. CMS = Centers for Medicare and Medicaid Services; HCAHPS = Hospital Consumer Assessment of Healthcare Providers and Systems (large hospitals means 300 or more beds and patient surveys); NCQA = National Committee for Quality Assurance (Quality Compass 2008 represents the 2007 measurement year).

to \$8.5 million after investment losses. The organization is again facing a difficult financial environment brought on by the current recession and the downsizing of the auto industry, with uncompensated care rising 22 percent to \$150 million in 2008. This trend continues in 2009 as more patients are losing health care coverage. The organization has undertaken a variety of measures to maintain a profit margin, including freezing salary and capital spending levels, managing supply costs, improving patient throughput, and reducing clinical costs by preventing patient harm.

HFHS's turnaround experience points up that achieving integration entails more than simply owning or arranging the parts of a system; it requires "owning" the concept of integration itself and assuring its realization in practice so that the organization's strategies and work produce a desired alignment of purpose, coordination of effort, and consistency in outcomes. It also illustrates how an integrated delivery system can benefit from a built-in feedback loop, in recognition that a failure to fully realize opportunities for integration between parts of the system manifests itself in lost revenue opportunities or suboptimal performance.

Schlichting credits much of Henry Ford's recent success to having a highly collaborative, cross-functional leadership team, a salaried and highly motivated physician group, an integrated and coordinated delivery system, and a focus on clinical excellence with measurement against standards and recognition of group performance. "It is my belief that people are inherently motivated to want to do the right thing" with supportive and engaged leadership, she said. "People could see that we were rolling up our sleeves and engaged in the process of developing initiatives and tactics that would drive for the kind of performance we wanted to accomplish, and that really helped."

The process of integration has included not only the practical task of bringing leaders together to align business unit strategies, but also the practice of regularly communicating those strategies and associated goals to the workforce and engaging their commitment through measurement and recognition of performance. "We have had a huge culture change here that has

made us believe in clear accountability, focus on the right issues, transparency, and teamwork that I think has really been transformative in terms of our results and the overall morale and energy level of the organization," said Schlichting.

An integrated delivery system provides the opportunity to monitor performance across the spectrum of care. Using common metrics to compare peer performance within a group practice helps focus physicians' attention on improvement against achievable benchmarks and avoids debate about the validity of external peer group comparisons, said Sue Hawkins, vice president of planning and management services. "We have people so comfortable with being measured that they're uncomfortable when they're not. That includes our trustees, which has been really helpful" in driving improvement at the hospital level, she said. "If your local board is sitting there asking why your mortality rate isn't improving, that has a pretty powerful influence in the field," said William Conway, M.D., senior vice president and chief quality officer.

The organization appears to have successfully married a "top-down" strategic planning and oversight process with a culture that values quality and innovation using ideas that can rise from the bottom up. A multidisciplinary team approach to problem-solving helps build consensus and buy-in. Yet there is also a strong action orientation. "You have to have people who are obsessed with change—not just talking about it, but actually doing it. Ideas aren't as critical as execution," said Conway. The experience with the chronic care initiative suggests, however, that changing clinical roles and patient referral patterns can be difficult even within multispecialty groups that share common philosophy and culture.

Some clinical improvements such as intensive diabetes management services may not lead to immediate, measurable cost-savings for the health system because the benefits of reduced complications occur some time in the future. Nevertheless, the organization will make such services available to all medical group patients when they offer an efficient way to achieve important clinical results because, as Muma observed,

“It’s the right thing to do.” In other cases, a care management program (such as a lipid clinic described in a previous Commonwealth Fund case study) may be limited to patients who are members of the system’s health plan and for whom savings realized from reduced disease complications can be used to pay for the operation of the care management program.¹⁷

Henry Ford’s experience suggests that the culture of the medical group is one of the keys to the success of an integrated delivery system. “These are people who have a high value on teaching and learning, a high value on spreading medical knowledge, a high value on medical care, and a high value on teamwork,” Schlichting said. “Our doctors are there with us, all the time. It’s an amazing experience to have that as part of what we can count on to improve quality.” Reflecting on her experience, Schlichting thinks that it would be difficult to “convert” physicians in private practice to engage in such a culture, but that it could be developed from scratch through a mentorship program with young physicians.

Ownership of a health plan that has achieved a critical mass in the marketplace has been another key

to successful system integration through three main avenues identified by Schlichting and other leaders: 1) helping HFHS “keep an ear to the ground” to understand the needs of employers, a habit that has led to the development of mutually beneficial partnerships such as the regional ePrescribing Initiative and wellness programs undertaken with the automobile manufacturers; 2) building mutual understanding and respect between the health plan administrators and physicians as they work together on innovations and common quality improvement goals; and 3) providing financial stability to support the system’s bond ratings and to fund system operations.

In summary, Henry Ford Health System provides an example of a mature integrated delivery system that has leveraged its core strengths to overcome a difficult economic environment and to drive higher levels of performance through a strategic planning process that involves leaders at all levels, a culture of excellence reinforced with accountability and group recognition, and internal and external partnerships among the organizations that provide, finance, and purchase health care services.

For a complete list of case studies in this series, along with an introduction and description of methods, see *Organizing for Higher Performance: Case Studies of Organized Health Care Delivery Systems—Series Overview, Findings, and Methods*, available at www.commonwealthfund.org.

NOTES

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- ¹⁶ Rankings for CMS Hospital Compare clinical topics (heart attack, heart failure, and pneumonia treatment and surgical care improvement) included hospitals that reported on all measures and recorded at least 30 patients in each topic. Four Henry Ford Health System hospitals were evaluated (only results in the top quartile are noted). Results include Henry Ford Macomb Hospital (formerly St. Joseph's Medical Center), which became fully owned by Henry Ford Health System in July 2007 (the system previously owned a 50 percent share of the hospital). The overall patient rating of care means a patient rating of 9 or 10 on a 10-point scale.
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This study was based on publicly available information and self-reported data provided by the case study institution(s). The Commonwealth Fund is not an accreditor of health care organizations or systems, and the inclusion of an institution in the Fund's case studies series is not an endorsement by the Fund for receipt of health care from the institution.

The aim of Commonwealth Fund–sponsored case studies of this type is to identify institutions that have achieved results indicating high performance in a particular area of interest, have undertaken innovations designed to reach higher performance, or exemplify attributes that can foster high performance. The studies are intended to enable other institutions to draw lessons from the studied institutions' experience that will be helpful in their own efforts to become high performers. It is important to note, however, that even the best-performing organizations may fall short in some areas; doing well in one dimension of quality does not necessarily mean that the same level of quality will be achieved in other dimensions. Similarly, performance may vary from one year to the next. Thus, it is critical to adopt systematic approaches for improving quality and preventing harm to patients and staff.

