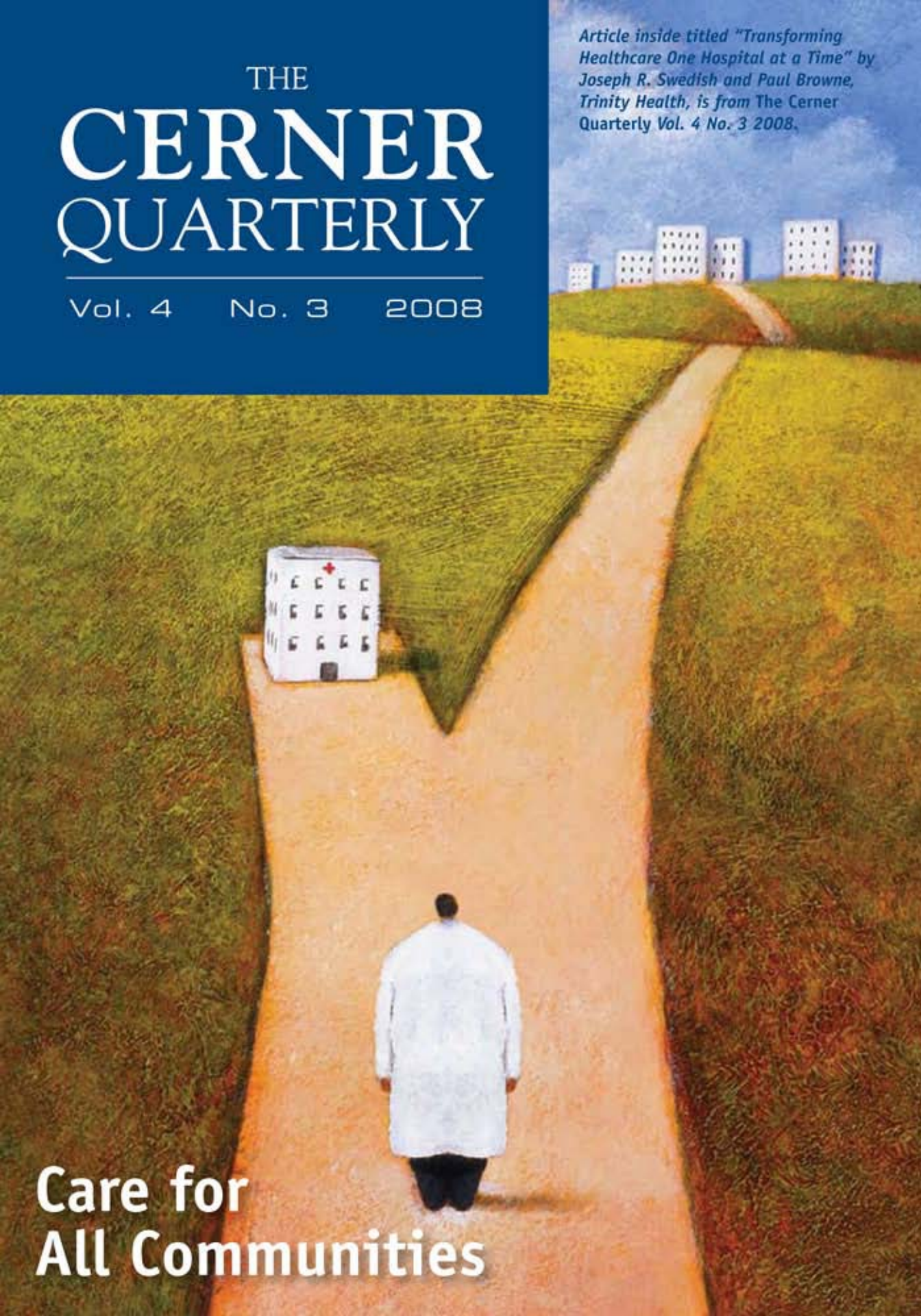
THE
CERNER QUARTERLY
Vol. 4 No. 3 2008

Article inside titled "Transforming Healthcare One Hospital at a Time" by Joseph R. Swedish and Paul Browne, Trinity Health, is from The Cerner Quarterly *Vol. 4 No. 3 2008.*



Care for All Communities

Transforming Healthcare
One Hospital at a Time

Trinity Health is creating a new realm of care within its community hospitals—and leading the industry toward an era of zero errors and a more satisfying patient experience

In just five years, 22 community hospitals within Trinity Health have automated their patient documentation systems. As Trinity Health prepares to enter its final implementation phase at its largest hospitals, leaders are beginning to realize the benefits of smarter, safer and more cost-effective care.

By **Joseph R. Swedish**
President and Chief Executive Officer
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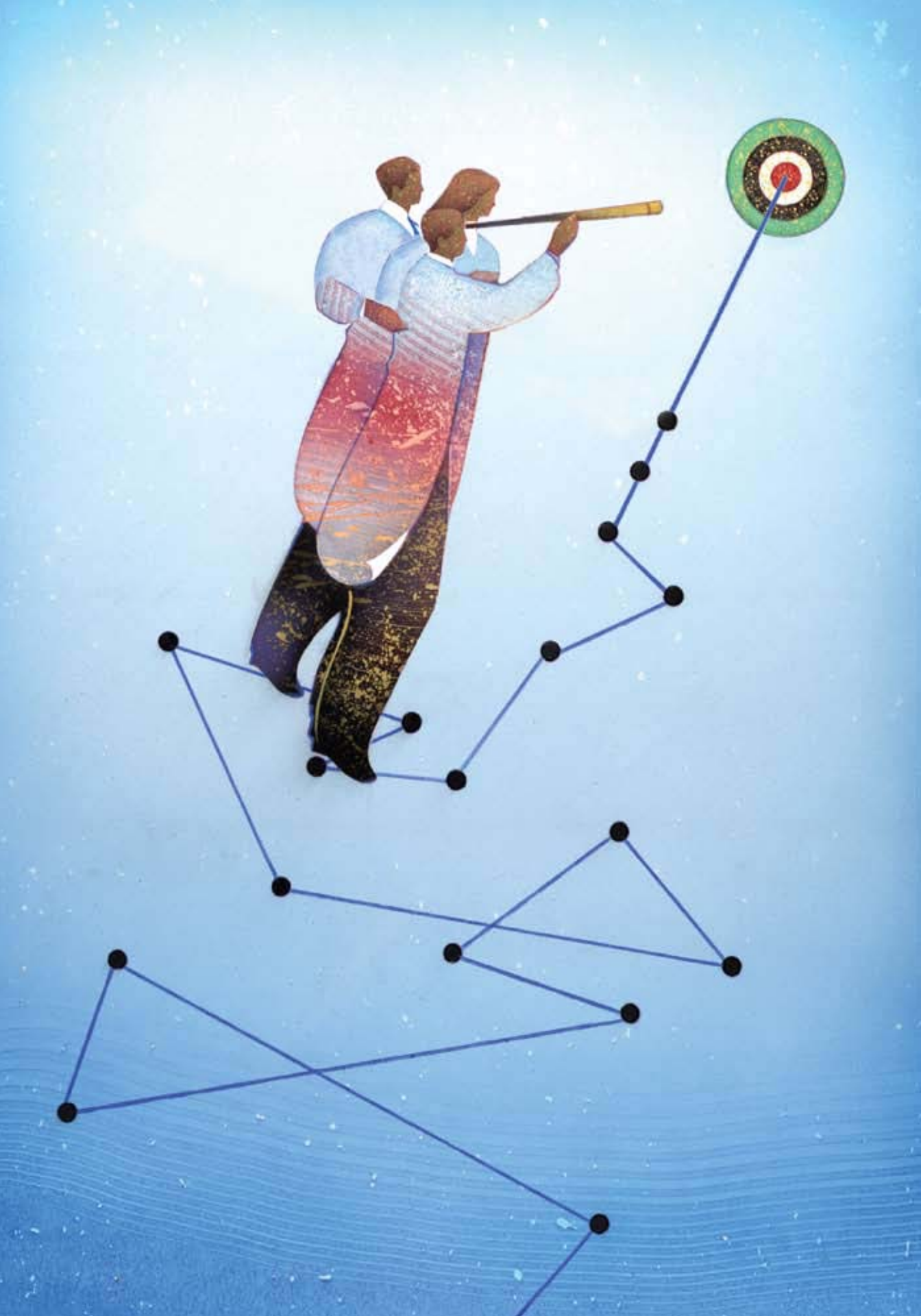
Visit any Trinity Health hospital in Michigan, Indiana and Iowa, and you will see physicians rolling carts with wireless laptops into patient rooms. With a few keystrokes, the most recent lab results, medical history, prescriptions and nurse's notes light up the screen while the physician engages in light conversation with the patient.

A few clicks later, the physician sends a new order to the pharmacy department, where it gets crosschecked against a massive database for possible adverse effects. Minutes later, the nurse arrives to administer the medication.

What just happened? The patient had a faster, safer and more personalized care experience than he would have at the non-digitized hospital down the street.

There's no doubt in our minds that electronic health records (EHRs) and computerized physician order entry (CPOE) are revolutionary technologies that transform the way medicine is practiced, taught and advanced within our integrated network of community hospitals.

Less than a decade ago, these hospitals looked like most hospitals in the United States. Clip charts, over-stuffed medical records rooms and backlogged pharmacy departments were the norm. Our information technology (IT) system was a patchwork collection of independent processes and best-of-breed strategies.



Genesis progression

2003	
May	Mercy Hospital *Port Huron, Mich.*
2004	
July	Mercy Health Partners *Muskegon, Mich.*
Oct.	St. Mercy's Health Care *Grand Rapids, Mich.*
2005	
Feb.	Battle Creek Health System *Michigan*
April	St. Joseph's Healthcare *Clinton Township, Mich.*
July	Mercy Medical Center *North Iowa*
Sept.	Mercy Medical Center *Sioux City, Iowa*
2006	
Feb.	Mercy Medical Center *Dubuque, Iowa*
	Mercy Medical Center *Dyersville, Iowa*
March	St. Mary Mercy Hospital *Livonia, Mich.*
2007	
March	St. Joseph Mercy Oakland *Michigan*
Oct.	Mercy Medical Center *Clinton, Iowa*
2008	
April	St. Joseph Regional Medical Center *South Bend, Ind.*
Aug. – Sept.	Mercy Health Network *Iowa*
Sept.	Holy Cross Hospital *Silver Spring, Md.*
2009	
Winter	St. Alphonsus Regional Medical Center *Dyersville, Iowa*
Summer	St. Joseph Mercy Health System *Ann Arbor, Mich.*
Fall	St. Agnes Medical Center *Fresno, Calif.*
TBD	Mount Carmel Health System *Columbus, Ohio*

That all changed in 2000, when Trinity Health leadership decided to start one of the most sweeping community-based hospital IT initiatives in the country.

We called our initiative "Genesis" because it represents the creation of a new era of healthcare in the 21st century. As a Catholic health system carrying on a 160-year legacy of care, Genesis represents the next generation of Trinity Health's founding congregations to meet community needs and accept the inherent risks of change when responding in faith and hope, and with compassion.

Over the years, Genesis has become integral to a process-improvement initiative to implement uniform registration and medical record systems. It unites state-of-the art computer systems with best-practice processes in the areas of clinical, revenue cycle and enterprise resource planning.

All of these things coalesced into a common set of information systems that provides caregivers with the information they need to improve quality and safety. That's the genesis of Genesis.

Trinity Health is one of the first multi-state health systems to engage in an advanced, large-scale initiative to increase efficiency and improve care quality through computerized solutions that support clinical process improvements.

At a pace of up to four hospitals a year, Trinity Health has implemented a standardized EHR and care delivery IT system at 22 hospitals across Michigan, Iowa and Indiana. We've achieved high levels of physician adoption; each day, more than 700 physicians enter orders into our system, for a CPOE rate of greater than 70 percent.

Since 2003, all Trinity Health hospitals have been equipped with a fully operational adverse drug event (ADE) system. Over the last

five years, more than 45,000 incidents were recorded where a computer-generated alert resulted in a physician changing (and presumably correcting) a medication order. The outcome has been safer care for our patients and a more efficient operating environment. Imagine the time saved for the pharmacist trying to check and double-check all orders, and the computer never takes a sick day.

During the next 18 months, Trinity Health will continue our nationwide rollout with Genesis implementations at its largest medical centers in Maryland, Idaho, Michigan and California.

Examining the evidence

The four cornerstones of Genesis—EHRs, CPOE, ADE alerts and revenue/supply chain—are grounded on partner products from multiple IT suppliers.

But these systems are merely tools, and tools are only as good as the processes behind them. Healthcare IT can help us achieve quality care and better outcomes as long as the automated processes in place are evidence-based. Building on our experience, Trinity Health is determining the best ways to integrate the latest evidence-based treatment standards and medical research with state-of-the-art technology. Our clinical data repository contains 6.3 million patient records, and it is getting bigger as more member hospitals join the network. Mining this database helps our hospitals deliver evidenced-based medicine at the point of care and ensure improvements in overall clinical quality.

To accomplish this, multidisciplinary teams of physicians, nurses, administrators and IT executives develop methods to incorporate the latest standards and research into the system's technology. For example, one team studies every aspect of care—from admission to discharge—for patients with acute coronary syndrome in an effort to improve clinical outcomes and patient satisfaction. Another team is examining care processes for patients with heart failure, and we are forming teams around diabetes, community-acquired pneumonia and surgical infection prophylaxis.

Trinity Health makes rural connection

In the sparsely populated plains of northern Iowa, seven small hospitals are transforming the way healthcare is delivered in rural areas.

The hospitals, all managed within Trinity Health, represent the first integrated network in a U.S. rural healthcare setting. Less than 3 percent of the nation's small or rural hospitals (50 beds or less) tout a fully implemented electronic health system.

The pioneering implementation in northern Iowa was facilitated by two grants from the Agency for Healthcare Research and Quality (AHRQ). The first grant was awarded to Hancock County Memorial Hospital. It supported planning between Mercy-North Iowa, its rural hospital affiliates and county public/community health agencies to ensure compatibility with the extensive EHR system used by Mercy North-Iowa and other Trinity Health hospitals.

The second grant supported a partnership between Mercy-North Iowa, the seven associated rural facilities, Trinity Health and the University of Iowa College of Public Health. The grant aided in the implementation of a comprehensive, integrated EHR.

The primary aim is to reduce variation in clinical processes, provide decision support and improve communication through automation. Once the teams define the improved care processes, steps will be integrated into the EHR system. We will measure success by the ability to improve core clinical indicators, productivity measures, patient satisfaction, financial performance and community benefit.

Through Genesis, we have standardized approaches to assess a patient's risk of falling, development of pressure ulcers, suicide and deep venous thrombosis (blood clots). With this data embedded into the EHR, the clinician has access to evidence-based order sets to mitigate the risk and perform assessments should the clinical decision-support system identify a positive risk alert. This concentration of clinical knowledge has helped drive significant improvements in the following areas:

- 21 percent reduction in severity adjusted mortality rate, or 2,612 fewer deaths in calendar year 2007
- 97 percent of the core clinical indicators performing better than the national median
- A 45 percent reduction in inpatient falls with injury

Seizing HIT's potential

According to a study published in the *New England Journal of Medicine*, U.S. patients get appropriate medical care only 55 percent of the time.[1] Greater use of EHRs could improve care by tracking patients' medical history and providing electronic reminders about needed tests and treatments.

The time is ripe for process redesign.

At Trinity Health, the member hospital teams and the clinical operations improvement and information services departments consolidate lessons learned, study best practices, and, above all, communicate. Connecting the dots between care practices and outcomes allows the organization to extract full value from our technology investments while positioning our hospitals for future quality-improvement and cost-saving opportunities.

We must operate efficiently in healthcare. Costs are spiraling out of control, due in large part to redundancy and waste. Medical errors arise because of process failures, ineffective communication and lack of information. It is time to make the best use of new technology in every phase of a patient's experience to drive out efficiencies, eliminate errors and enhance communication. Capturing the additional anticipated benefits of an EHR is the next crucial step to make hospital care better and safer for everyone. TCQ

Uninsured receive Trinity Health EHR

To fulfill its mission to pioneer new models of care for vulnerable populations, Trinity Health is investing in an electronic health record (EHR) management system at three of its free health clinics in Michigan. The clinics serve uninsured patients in Detroit, Pontiac and Grand Rapids.

The initiative includes a remote telemedicine monitoring system for patients with severe and chronic conditions, such as heart disease and diabetes. Remote patient monitoring typically has only been used in home health and rural network environments.

The computerized records system is the same one used at Trinity Health's acute care hospitals. Grand Rapid's Browning Claytor Health Center was the first to implement *PowerChart Office*®, an EHR system used in physician practices. Mercy Primary Care in Detroit and Mercy Place in Pontiac will implement the system later this year.

1 *New England Journal of Medicine*, March 16, 2008, RAND Corporation Study, "Who Is at Greatest Risk for Receiving Poor-Quality Health Care?" by Asch, Steven M., et al.

Joseph R. Swedish, FACHE

President and Chief Executive Officer
Trinity Health

Joseph Swedish is president and chief executive officer of Trinity Health, the fourth-largest Catholic health system in the nation. Swedish focuses his leadership on the transformation of healthcare delivery through improved clinical and business processes and expanding access to the growing population of underinsured patients.

Swedish has 35 years of executive experience in both investor owned and nonprofit healthcare systems. Prior to joining Trinity Health, he was president and CEO of Centura Health, in Denver. He is a fellow in the American College of Healthcare Executives. Swedish also is on the board of the Catholic Health Association, the National Center for Healthcare Leadership and the Institute for Diversity in Health Management, an affiliate of the American Hospital Association.

He received a bachelor's degree from the University of North Carolina at Charlotte and a master's degree in health administration from Duke University.

Paul A. Browne

Senior Vice President and Chief Information Officer
Trinity Health

Paul Browne is senior vice president and chief information officer of Trinity Health. In this role, Browne is responsible for Trinity Health's information services (IS), which includes more than 1,200 IS professionals in seven states. He also oversees Trinity Health's enterprise level Program Management Office, which develops and coordinates the organization's strategic plan.

Prior to becoming CIO in 2005, Browne directed Trinity Health's IS Project Management Office with a primary focus on the health system's Genesis initiative. His primary focus since joining Trinity Health in 1999 has been the implementation and ongoing support of enterprise-wide clinical, administrative and enterprise resource planning information systems.

In 2006, Browne was the only health system CIO to appear on *ComputerWorld*'s "Premier 100 IT Leaders" list.

Browne received a bachelor's degree in economics and a master's degree in health administration and public health from the University of Michigan.