Mercy Virtual
Connects with a New Model of Care

By THOMAS HALE, MD, PhD, and RANDALL MOORE, MD, MBA

St. Louis-based Mercy is on a journey to radically change the care delivery model for the communities its health system serves — and show the way to the country as a whole. Lynn Britton, Mercy president and chief executive officer, has charged the ministry to:

■ Shape its own future. Regardless of what legislators, payers and other self-interested parties direct, Mercy will develop a patient-centered model of care built on a structure of partnership and integration of all aspects of the health care delivery system.

■ Serve Mercy's communities by overcoming traditional cultural, political or geographic barriers.

■ Base this patient-centered model on team care, coordination of care delivery and utilization of the entire skill sets available within the health care continuum.

■ Leverage technology to provide a model that remains true to the patient-physician relationship, but allows for increased efficiencies and clinical effectiveness, and provides access to care for all.

It is within this culture of change and innovation that Mercy Virtual was born. It has been a 10-year journey that is a natural evolution for the health system. When the Sisters of Mercy were first established more than 180 years ago, they were not content to remain cloistered. They became known as the "walking Sisters" and ventured into the streets of Dublin and nearby communities to serve where the need was most obvious.

In much the same way, Mercy today is using a telehealth model to reach beyond the walls of its hospitals and offices to connect patients and providers, regardless of the distance between them; to monitor remotely and continuously the health of patients in hospitals and in their homes; and to manage health care proactively in a way that anticipates and meets the needs of large employee populations, communities and individual patients.

THE FIRST VIRTUAL CARE CENTER

Mercy is cementing this commitment to telehealth by building the world's first virtual care center. The facility will serve as the command center for all of Mercy's telehealth programs, bringing together the professionals and technology to reach more patients, develop more services and

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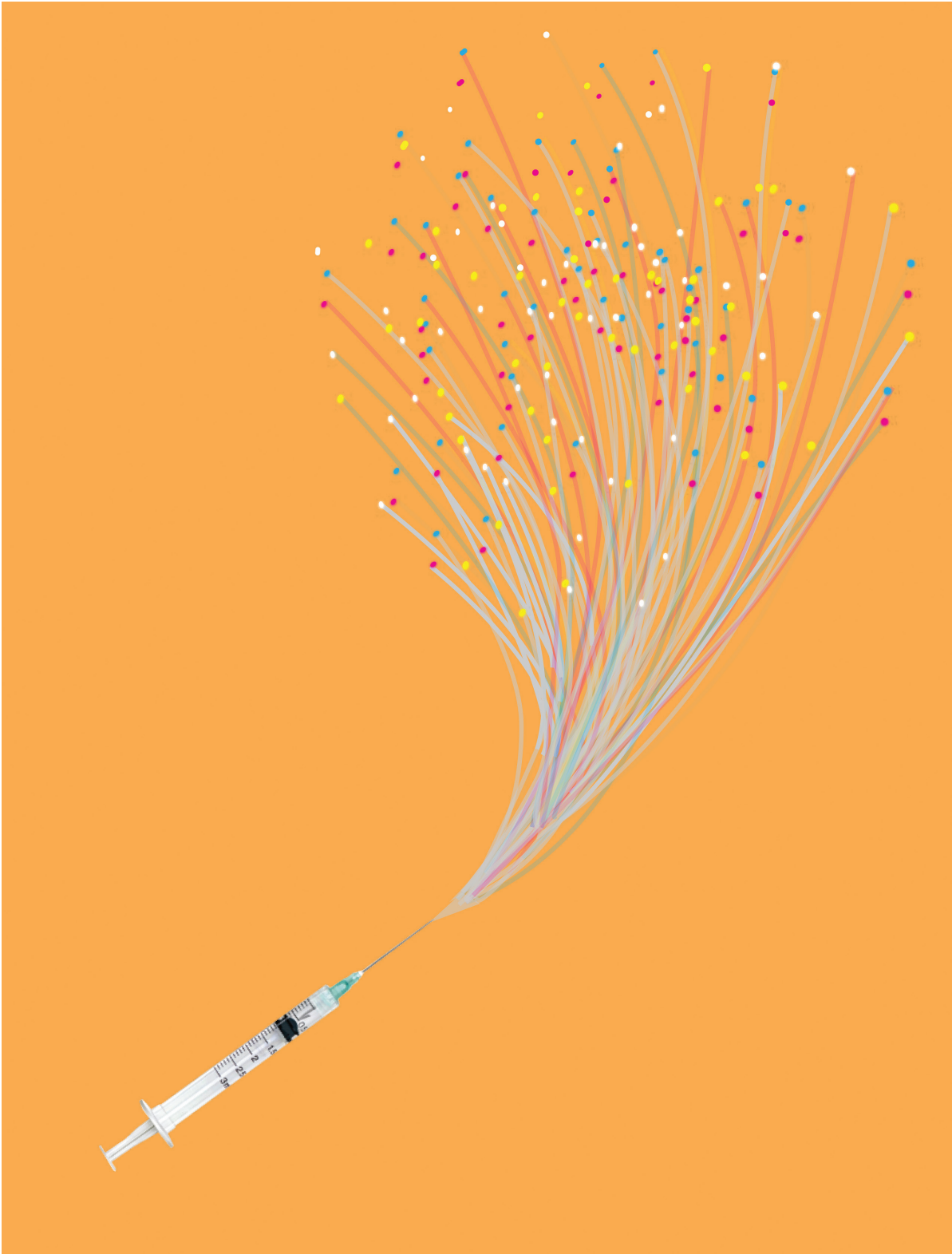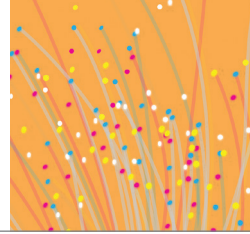
improve how Mercy delivers virtual care through education and innovation.

The four-story, 120,000-square-foot center, located in Chesterfield, Mo., will open in the summer of 2015 and accommodate nearly 300 physicians, nurses, specialists, researchers and support

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staff. Care will be delivered 24/7 via audio, video and data connections to locations across Mercy, as well as outside the Mercy system through partnerships with large employers and with other health care providers. In the next five years, Mercy estimates the virtual care center will manage more than 3 million telehealth visits and serve as a hub for advancing telehealth through research and training. Through its creation, Mercy's virtual care center will extend access to primary and specialty care for patients in their communities and into their homes.

CONNECTING PATIENTS AND PROVIDERS

Nationally there is an acute shortage of child psychiatrists. On average, a psychiatric patient can wait six to 12 months before ever being able to see a doctor, and some patients live hours away from the doctor's office. Teleconsultation brings together patients and providers, regardless of their location or distance apart. This is particularly important to Mercy, where 60 percent of patients live within rural communities.

Such is the case for Julie (not her real name), who regularly "sees" Mercy child psychiatrist Kyle John, MD, in Springfield, Mo., about 100 miles away from where she lives. Thanks to telehealth, Julie can keep her appointments with greater ease and without her mother having to take off work for travel time.

But telehealth is not limited to a conversation or a simple video chat. Online-enabled instruments allow clinicians to perform a wide range of medical exams, view electronically transmitted test results and read medical records. For example, Mercy currently uses peripheral ultrasound

and echocardiograms for newborns. If a heart murmur is heard on a newborn in Joplin, Mo., the baby receives an ultrasound that is read the same day by a pediatric cardiologist in another location. In the past, families have had to wait a week before they could get such an evaluation done, and now their anxieties and fears usually are eased the same day. (More than 70 percent of the time, there is no problem.)

Mercy's telestroke program uses two-way video to connect with a neurologist at the moment a possible stroke patient arrives in the emergency department. The neurologist can talk with the patient to make a full assessment. Telehealth provides early stroke diagnosis and intervention, allowing some patients to receive a clot-busting drug called tPA that helps restore blood flow and prevent brain damage and permanent disabilities, if the drug is administered within a relatively short space of time. Without the addition of the stroke specialist to the care team, many patients would not have access to such treatment.

ANOTHER SET OF EXPERT EYES

One of Mercy's strongest telehealth capabilities is in remote ICU monitoring. In 2006, the Mercy SafeWatch teleICU program was launched. Despite the absence of a defined revenue stream, Mercy leaders implemented this technology across the ministry. Today, Mercy operates the world's largest single-hub electronic intensive care unit. From one location in St. Louis, experienced critical care physicians and nurses monitor more than 450 ICU beds in five states.

By watching over patients with an extra set of expert eyes — provided by both clinicians and technology — Mercy is on pace to eliminate such ICU complications as ventilator-associated pneumonia and central line blood stream infections, and to reduce ICU length of stay by 20 percent.

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This same teleICU monitoring technology, coupled with a sophisticated early warning system, is helping identify, triage and manage hospital patients most susceptible to sepsis. In doing so, Mercy has been able to reduce the percentage of severe sepsis patients progressing to septic shock from 13 percent to 5 percent, significantly improving patient outcomes while lowering costs and increasing inpatient capacity.

KEEPING PATIENTS HEALTHY AND AT HOME

Through online technology, Mercy manages the ongoing health care needs of individual patients, communities and large populations of employees. Telehealth also augments the care physicians and nurses deliver to the acutely ill in recovery or to the chronically ill. Case and disease managers, social workers and coaches educate patients in self-care management to avoid behaviors that may exacerbate their conditions or lead to complications.

Home telemonitoring equipment allows Mercy to keep a close eye on patients such as Dorothy, who is living with chronic conditions. Dorothy resides in rural Missouri. She follows the same routine each morning — testing her blood sugar, weighing herself and taking her blood pressure. All her daily results are instantly uploaded to her electronic medical record. That record is carefully monitored by her medical team in Springfield, Mo., many miles away.

If they see a problem, the Mercy team calls Dorothy to talk about what measures she should take or medication changes she should make. "It's like having angels watching over me," she has said repeatedly to her Mercy case manager.

Early identification of congestive heart failure (CHF) deterioration for patients like Dorothy has been a key piece of Mercy's broad array of programs designed to lower heart failure readmissions. With the implementation of these efforts over the last five years, Mercy has seen CHF readmission rates drop from about 24 percent to below 16 percent. These intensive telehealth ambulatory solutions are a new model of care delivery that leverages technology, home monitoring, data analytics and a centralized care team to allow for a virtual model augmenting the standard care a patient receives. The telehealth model is expected to dramatically decrease CHF admissions, not just readmissions.

HELPING MORE THAN PATIENTS

Although obviously beneficial for patients, a telehealth model also improves the quality of life for on-site specialists and supports clinician recruitment and retention. In rural areas, it can be challenging to recruit a highly credentialed specialist to work in a small hospital. Even if the physician is willing to make the move, the hospital may be able to afford only one such person. With no backup, the specialist would need to be on call year-round, an arduous schedule that impacts the physician's quality of life and leads to high turnover.

Through telehealth, Mercy provides backup support for all specialists, enabling the organization to offer specialized care at any time and at any facility so clinicians can maintain balance in their lives, increasing both satisfaction and retention.

GAINING PHYSICIAN BUY-IN

One of the biggest challenges Mercy has had when launching telehealth programs is physician resistance. Some physicians initially struggled to accept the technology as an appropriate way to

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assess patients and ensure safe care. The key to overcoming hesitation has been to identify physician champions and enlist their assistance in getting others on board.

Physicians also need to experience telehealth firsthand to fully appreciate it: Seeing is believing. By touring the teleICU, located in St. Louis, and interacting with the equipment, physicians can better visualize how the technology enhances patient care and how remotely located intensivists and critical care nurses can be "by the bedside" through the use of visual and monitoring technology. One physician observed, "This is like having a physician by the bedside 24/7." Another commented, "I think it's like having a physician in the family."

PEOPLE CARING FOR PEOPLE

It is easy to boast about the technology and the ease of sending electrons across the country instead of moving providers and patients, but good health care is still about people serving people. Telehealth is not a replacement for the relationship
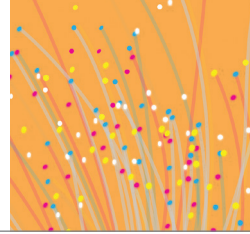
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patients have with their physicians or their care team. Instead, telehealth is a tool that supports the effectiveness of the caregiver and extends the accessibility of the physician so patients can receive the right care at the right time in the right place. This usually means patients remain in their communities with their families.

And just as important, Mercy has learned that the technology teams and caregivers can work together to identify care needs earlier, allowing delivery of simpler, less costly and higher impact care.

Although telehealth is the innovation today, utilizing the full potential of data will be the innovation of tomorrow. Mercy already is investing in technology and people to create models that will provide physicians and patients with predictive and prescriptive analytics.

With analytic tools, Mercy caregivers will be able to intervene in patient care before a stroke occurs or the heart attack happens. With prescriptive analytics, Mercy will be able to decrease the variation in care delivery and utilize the most up-to-date treatments for its communities. It is likely that in the near future, through data and gene sequencing, Mercy Virtual will be able to tailor clinical treatments for critically ill patients and severe conditions such as cancer and heart disease.

The United States is in the throes of what many have labeled a health care crisis. Medical care is too costly, consuming up to 19 percent of the nation's gross national product. There are not enough providers — either specialists or primary physicians.

The Accountable Care Act creates funding mechanisms for citizens to better access and pay for care. At the same time, the creation of accountable care organizations is changing Medicare payment methodologies through gain-sharing arrangements. However, all of these changes are being applied in a fee-for-service financial model that tends to financially reward episodic treatment, more intensive care and hospitalizations, while penalizing and restraining systems to prevent the escalation of disease in the first place. This represents the proverbial attempt to push a square peg through a round hole.

Mercy is exploring partnerships with regional health systems to bring the promise and potential of telehealth into their systems. In doing so, Mercy envisions a national, interdependent network of virtual care centers — organizations that will significantly improve access to high value care and be a bridge for the transformation of the U.S. health system.

THOMAS HALE is executive medical director, Mercy Virtual, St. Louis. Prior to being named to his current position in 2009, he served as president of Mercy Medical Group for 15 years. He was the physician leader for Mercy's implementation of a fully integrated electronic health record system covering more than 30 hospitals and 700 ambulatory sites.

RANDALL MOORE is president, Mercy Virtual, St. Louis. His experience includes more than 30 years working as both an academic clinical physician as well as a business executive focused on the development and implementation of transformational health care models.

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